



Surgical Variance Report 2017 General Surgery

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Introduction to Surgical Variance Report 2017: General Surgery

The Royal Australasian College of Surgeons' (RACS) vision is to champion surgical standards, professionalism and surgical education in Australia and New Zealand. It is committed to advocating for sustainable, safe, affordable and high quality healthcare that represents best practice.

Similarly, Medibank is committed to improving our customers' health outcomes, enhancing patient experiences and improving the affordability of healthcare for all Australians. In doing so, we aim to help to create a more affordable and sustainable health system for all.

In April 2016 RACS and Medibank published the inaugural Surgical Variance Report: General Surgery, the first of five reports released that year, including urology, otolaryngology, head and neck surgery, vascular surgery and orthopaedic surgery. These reports were based on de-identified Medibank claims data from 2014. These reports were sent to RACS Fellows and are available online. The purpose of developing and publishing these reports was to address a gap in the information available to surgeons on clinical and other indicators, for different procedures in their specialty, particularly within the private sector.

These reports highlighted variation between surgeons in clinical and other indicators for a number of high volume procedures. In shining a light on this variation, the reports identified opportunities to provide guidance on best practice. One example was variation between surgeons in same day rates for hernia repair surgery. In response, RACS undertook a literature review on the evidence for same day hernia surgery, and have released a report which recommends a target for day hernia rates.

The feedback received on the inaugural Surgical Variance Reports was overwhelmingly positive and RACS and Medibank are pleased to publish updated reports for all five surgical specialties in 2017. This Surgical Variance Report 2017: General Surgery, is the first in the series of updated reports which will be published over the coming months.

The procedures included and indicators analysed in these reports remain the same as those in the original Surgical Variance Reports, however these reports are based on analysis of de-identified Medibank claims data from the two most recent financial years (years 2015 and 2016).

We believe that information transparency is an important tool in improving clinical outcomes and patient care and hope that these reports encourage surgeons to reflect on their own practice. RACS and Medibank will continue to work together to identify opportunities to improve and enhance these reports so that they are as meaningful and useful as possible to surgeons, and we welcome everyone's feedback and comments.



Mr Phil Truskett
President
Royal Australasian College of Surgeons



Dr Linda Swan
Chief Medical Officer
Medibank

Foreword

Information transparency is the key to improving the outcomes and experience for patients using the healthcare sector, and ensuring its long term sustainability. Following the successful release of the inaugural Surgical Variance Reports by the Royal Australasian College of Surgeons (RACS) and Medibank in 2016, it was appropriate that ongoing responsibility for continuing and improving on this important transparency initiative was passed to the Sustainability in Healthcare Committee.

The Sustainability in Healthcare Committee contributes to the development of strategies that focus on the long-term provision of high quality healthcare that is affordable and financially sustainable

These second editions of the Surgical Variance Reports contain the same procedures and indicators as the inaugural reports, but two years of data has been analysed to increase the number of surgeons included in the data sample as well as the number of procedures analysed.

The objective of these reports is to explore variation in surgical practice and to raise questions for surgeons to consider. The analysis presented in these reports provide numerous examples of observed variation between surgeons. The lengths of patient stay in hospital, the frequency of readmissions and the out of pockets charged for the same procedures are just some examples of observed variation between surgeons for the same procedures. This variation may be due to clinical factors, however it may also represent an opportunity to change clinical practice to improve patient outcomes and the sustainability of the healthcare system.

The Sustainability in Healthcare Committee will continue to explore how analysing and sharing healthcare data can contribute to driving high quality, affordable and financially sustainable healthcare. This will include working with Medibank to make this data available to individual surgeons, should they request it, so that they can see how they compare with their peers.

The debate about the financial sustainability of our healthcare system will continue, and surgeons should reflect on the important contribution they can make in the delivery of better value healthcare. These reports inform us about a number of the drivers of value in healthcare, and by making this information transparent and publically available, our hope is that they contribute to continuous improvement in our healthcare system.



Mr Lawrie Malisano
Chair, Sustainability in Healthcare Committee

Data used in the report

The data contained in this report is based on administrative claims data received by Medibank, for treatment of holders of Medibank-branded (but not ahm-branded) policies. The data relates to hospital separations with an admission date falling between 1 July 2014 and 30 June 2016 (2015 and 2016 financial years) and any follow-up hospital separations funded by Medibank within six months of discharge. The data comprises:

- Hospital claims data submitted to Medibank by private hospitals and used by Medibank to assess and pay benefits relating to hospital treatment on behalf of members. Hospital claims data includes details relating to the use of, amount charged and benefits paid for hospital accommodation, intensive care and prostheses provided in connection with treatment in hospital
- Hospital casemix protocol (HCP) data submitted to Medibank by private hospitals for each privately insured hospital separation, as required by legislation. HCP data includes details relating to diagnoses, interventions, demographics and financial data in connection with policy holders' treatment in hospital
- Medicare Benefit Schedule (MBS) claims data from medical practitioners, including diagnostic providers, submitted to Medibank by Medicare, medical practitioners or members, which is used by Medibank to assess and pay benefits for medical and diagnostic services provided to policy holders in relation to their hospital treatment. MBS claims data includes details relating to the use of MBS item numbers by medical practitioners as well as the amount charged, benefits paid and out of pocket costs incurred by policy holders for each MBS item claimed.

Data relating to individual surgeons and physicians have been identified using the Medicare provider number on the MBS claim, with activity aggregated and summarised across all practice locations relating to that provider number. A principal surgeon has been identified for each hospital separation based on the surgeon claiming the highest value MBS item schedule fee relating to a surgical procedure for that hospital separation.

The indicators included in this report for each procedure have been selected by RACS, having regard to the limitations of Medibank's datasets, and in consultation with the Sustainability in Healthcare Committee, which comprises a panel of specialty experts (see page 65 for membership).

Surgeon-level analysis of the indicators included in this report has been limited to surgeons who performed at least five procedures. This has been done to ensure that each surgeon has a sufficient sample of separations to allow a value (e.g. an average, median or percentage) against an indicator to be reported. State and territory values have only been published where five or more specialists were included in the dataset, to protect the anonymity of surgeons in those areas. Medibank has not shared any information with RACS which would enable RACS to identify surgeons and only de-identified data is contained in this report.

Outliers at a separation-level and surgeon-level have been included in the analysis, although data points for some outlying surgeons are not shown in the figures.

Where the out of pocket charge recorded for the surgeon or for all other medical services was less than \$5 for the hospital separation, this has been classified as a \$0 out of pocket charge in the analysis to improve data reliability.

No attempts have been made to risk adjust the data.

Disclaimer

The purpose of this report is to provide information to surgeons that highlights variation in surgical practice and encourages surgeons to reflect on their own practice and potential causes of the variation, with a view to supporting the continuous improvement of clinical outcomes and patient care.

It is important to recognise that:

- while Medibank has taken reasonable steps to ensure the accuracy and validity of the data, the report relies on the accuracy of information prepared and provided by hospitals, medical practitioners and policy holders;
- the data used for the purposes of this report relates to a specific time period (being financial years 2015 and 2016 and part of financial year 2017);
- no adjustment has been made to the data based on casemix, patient risk or any other factor that may be taken into account when considering the data and any variation;
- the report identifies specialists by MBS provider stems, which in some limited cases may result in one individual being identified more than once;
- the report is not intended to, and is not a basis for, an assessment of relative or actual performance of specialists;
- the report does not contain any qualitative commentary or analysis; and
- the report may not reflect results of the wider private hospital sector or the health industry as a whole.

Indicators measured in this report

A selection of the indicators described below have been analysed for each of the eight procedures included in this report.

Indicator	Explanation
Median age of patients	The median age of a surgeon's patients at the time of discharge.
Median length of stay (nights)	The median number of nights that a surgeon's patients stayed in hospital.
Percentage of patients that stayed in hospital overnight	Separations where the patient stayed in hospital overnight, expressed as a percentage of a surgeon's total separations for that procedure.
Percentage of separations with an operative cholangiogram (MBS#30439)	Separations (laparoscopic cholecystectomy only) where an operative cholangiogram (MBS# 30439) was billed, expressed as a percentage of a surgeon's total separations for laparoscopic cholecystectomy.
Percentage of separations where the patient was transferred to ICU	Separations where patients were transferred to an intensive care unit (ICU), expressed as a percentage of a surgeon's total separations for that procedure.
Rate of Hospital Acquired Complications per 1,000 separations	Separations where a Hospital Acquired Complication was identified, expressed as a rate per 1,000 separations of a surgeon's total separations for that procedure. Hospital Acquired Complications are Medibank's subset of 82 International Classification of Diseases (ICD) codes drawn from the Australian Commission of Safety and Quality in Health Care's hospital acquired complications dataset (see Table 64). They are selected on the basis that they occur frequently in private hospitals (relative to other complications) and are likely to result in increased costs. Separations for which Medibank did not have a matching Hospital Casemix Protocol record have been excluded from this analysis.
Percentage of patients readmitted within 30 days	Separations where patients were readmitted to the same or a different hospital within 30 days of discharge from the original separation, expressed as a percentage of a surgeon's total separations for that procedure. Readmissions for all-causes except for readmissions for rehabilitation, psychiatric treatment, dialysis and chemotherapy, were included. Separations involving a patient 80 years or older were excluded from this analysis.
Percentage of patients re-operated on within six months	Separations where patients were re-operated on for the same procedure (meaning any one of the MBS codes included in the analysis for that procedure) within 6 months of discharge from the original separation, expressed as a percentage of a surgeon's total separations for that procedure.
Average number of MBS items billed	The total number of MBS items billed by a surgeon, expressed as an average number of MBS items billed per separation for a surgeon.
Average prostheses cost	The total of all charges relating to prostheses items (including consumables) for a hospital separation, expressed as an average prostheses cost per separation for a surgeon.
Average separation cost	The total of all charges relating to the hospital separation, expressed as an average cost per separation for a surgeon. Includes all charges raised by the hospital, medical practitioners, diagnostic providers and for prostheses items.
Average surgeon out of pocket charge	The patient out of pocket charge from the principal surgeon. Expressed as an average out of pocket charge per separation for a surgeon. This only includes out of pockets charged to the patient that were identified on the medical claim submitted to Medibank. Separations where the out of pocket charge recorded was less than \$5 have been classified as a \$0 out of pocket charge in the analysis to improve data reliability.
Average out of pocket charge for other medical services	The patient out of pocket charge for all other medical services (including charges from the anaesthetist, assistant surgeon and for diagnostics). Expressed as an average out of pocket charge for other medical services per separation, for a surgeon. This only includes out of pockets charged to the patient that were identified on the medical claim submitted to Medibank. Separations where the out of pocket charge recorded was less than \$5 have been classified as a \$0 out of pocket charge in the analysis to improve data reliability.

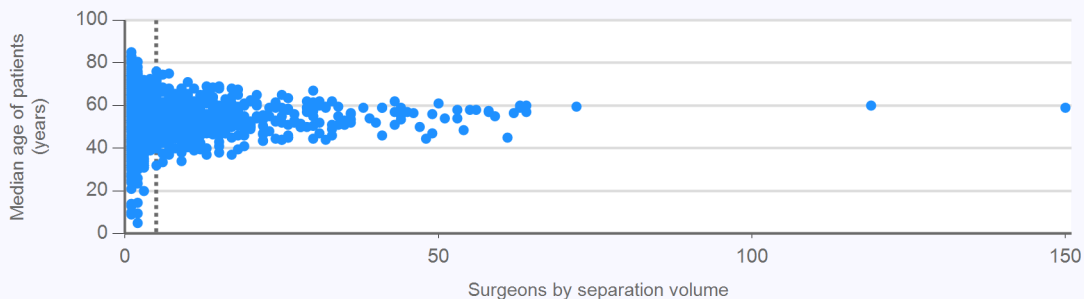
Laparoscopic cholecystectomy procedures

In financial years 2015 and 2016 Medibank funded 8,814 operations in private hospitals where laparoscopic cholecystectomy was recorded as the principal procedure (highest value MBS fee from the medical claim) for the hospital admission. For 8,471 of these procedures, MBS item number 30445 (see Table 1) was billed as the principal procedure. The analysis is limited to those 8,471 procedures. 795 surgeons (identified through the stem of their Medicare provider number) billed Medibank for those procedures. 458 (58%) of these surgeons billed Medibank for five or more procedures during financial years 2015 and 2016. Surgeon-level analysis of the indicators considered for this procedure has been limited to those surgeons with five or more patient separations, so that each surgeon has a sufficient sample of separations from which a value (e.g. an average, median or percentage) for an indicator can be reported.

Table 1: MBS Codes

Procedure	MBS Codes	Volume of Separations	Percentage of Separations	Definition	Notes
Laparoscopic cholecystectomy procedures	30445	8,471	96%	Laparoscopic cholecystectomy (Anaes.)	Separations included in following analysis
	30446	93	1%	Laparoscopic cholecystectomy when procedure is completed by laparotomy (Anaes.)	Separations not included in following analysis
	30448	250	3%	Laparoscopic cholecystectomy, involving removal of common duct calculi via the cystic duct (Anaes.)	Separations not included in following analysis

Figure 1: Median age of patients



----Surgeons with 5 or more separations

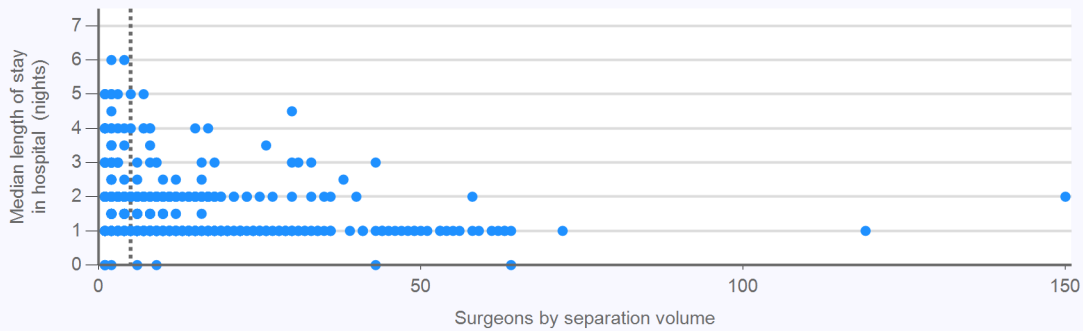
Across all the separations the median patient age was 55 years.

For the 458 surgeons who performed at least five procedures:

- The median age of a surgeon's patients ranged from 32 years to 76 years.

Is this variation in age clinically expected?

Figure 2: Median length of stay in hospital (nights)



Source: Medibank administrative claims data

----Surgeons with 5 or more separations (6 low volume (less than five separations) outlier(s) not shown on chart)

For the 458 surgeons who performed at least five procedures:

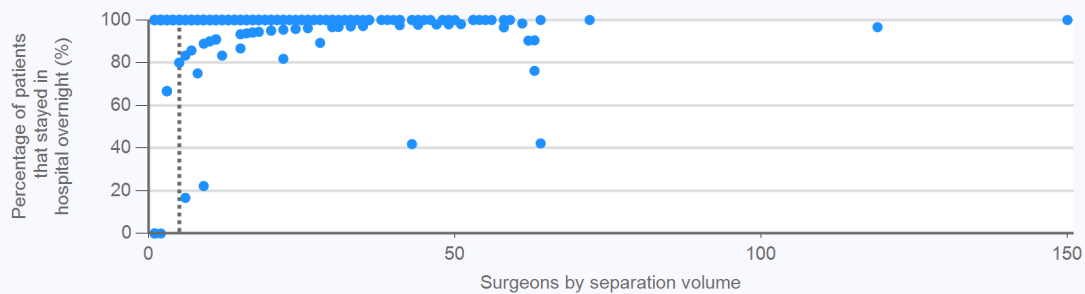
- The median number of nights that a surgeon's patients stayed in hospital ranged between 0 nights (same day admission and discharge) and 5 nights with a median of 1 night.

Table 2: Median length of stay (nights) by state/territory

State/territory	ACT	NSW	NT	QLD	SA	TAS	VIC	WA
Length of stay	1	1	2	1	1	1	1	1

What would you consider the most effective length of stay for this procedure?

Figure 3: Percentage of patients that stayed in hospital overnight



Source: Medibank administrative claims data

----Surgeons with 5 or more separations

In 98% of the hospital separations the patient stayed in hospital for at least one night.

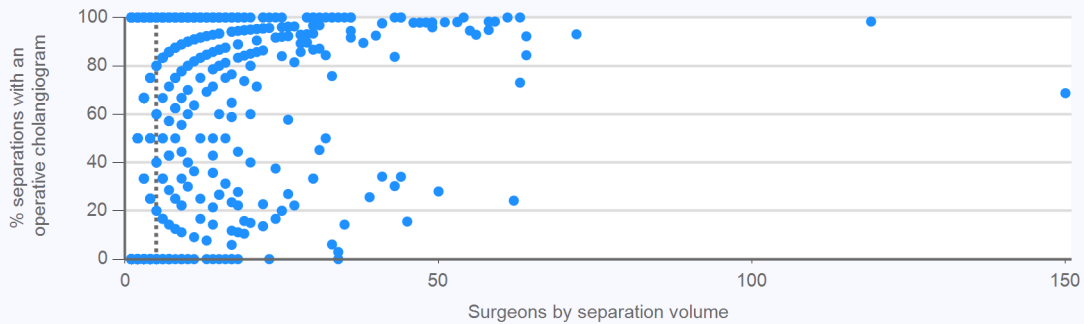
For the 458 surgeons who performed at least five procedures:

- 409 (89%) had all of their patients stay in hospital overnight
- 49 (11%) had a mix of patients that either stayed in hospital overnight or were admitted and discharged on the same day
- The percentage of a surgeon's patients that stayed in hospital overnight ranged between 17% and 100% with a median of 100%.

What are the reasons for a patient staying in hospital overnight following this procedure?

Why is there variation in the rate of patients that stay in hospital overnight between surgeons?

Figure 4: Percentage of separations with an operative cholangiogram (MBS# 30439)



Source: Medibank administrative claims data

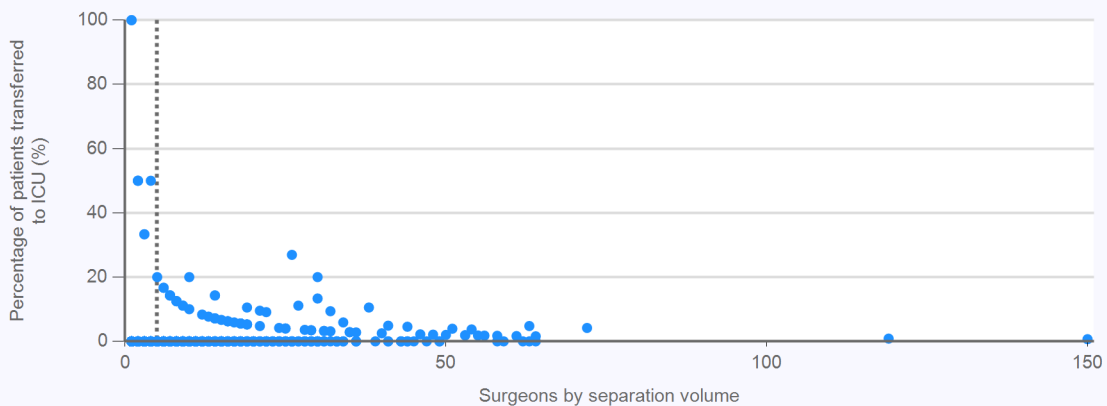
----Surgeons with 5 or more separations

For the 458 surgeons who performed at least five procedures:

- The percentage of a surgeon’s patients where an operative cholangiogram was billed ranged between 0% and 100% with a median of 90%
- 31 (7%) did not bill Medibank for an operative cholangiogram for any of their patients
- 276 (60%) billed Medibank for an operative cholangiogram for some of their patients
- 151 (33%) billed Medibank for an operative cholangiogram for all of their patients.

What is the role of an operative cholangiogram with this procedure?

Figure 5: Percentage of patients transferred to ICU



Source: Medibank administrative claims data

----Surgeons with 5 or more separations

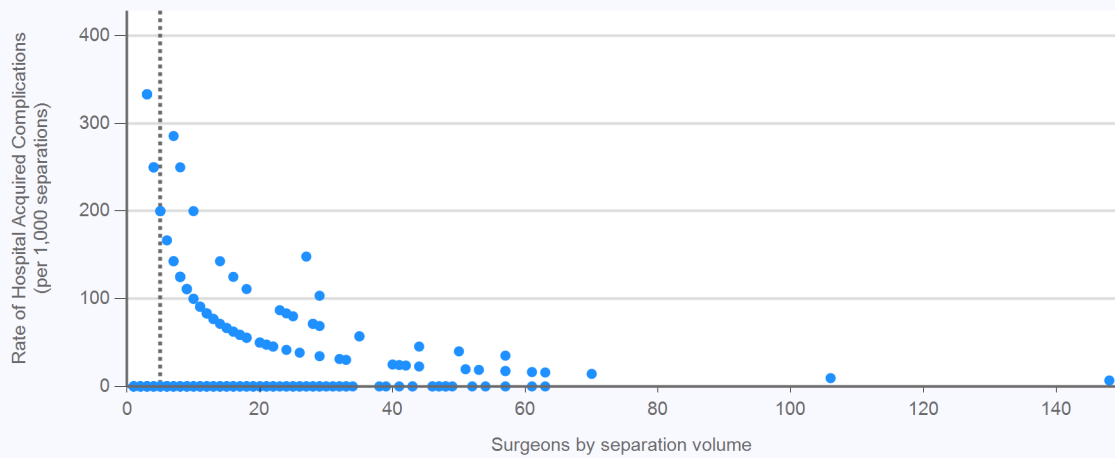
Patients were transferred to an intensive care unit (ICU) in 1% of overall hospital separations. Administrative claims data does not indicate whether the transfers were planned or unplanned. For 75 (60%) of these ICU transfers, the patient was in ICU for one day or less.

For the 458 surgeons who performed at least five procedures:

- 76 (17%) surgeons had one or more patient separations during which patients were transferred to ICU
- The percentage of a surgeon’s patients that were transferred to ICU ranged between 0% and 27% with a median of 0%.

Given that ICU transfers could indicate a difficult post-operative recovery, what would be the expected transfer rate?

Figure 6: Rate of Hospital Acquired Complications (per 1,000 separations)



Source: Medibank administrative claims data

----Surgeons with 5 or more separations (8 low volume (less than five separations) outlier(s) not shown on chart)

Hospital Acquired Complications are a Medibank subset of 82 International Classification of Diseases (ICD) codes drawn from the Australian Commission of Safety and Quality in Health Care’s list of hospital acquired complications (see Table 64). The rate of Hospital Acquired Complications was 15 per 1,000 hospital separations. Separations for which Medibank did not have a matching HCP record have been excluded from the analysis (as there was insufficient information to identify whether a Hospital Acquired Complication did or did not occur).

For the 444 surgeons who performed at least five procedures:

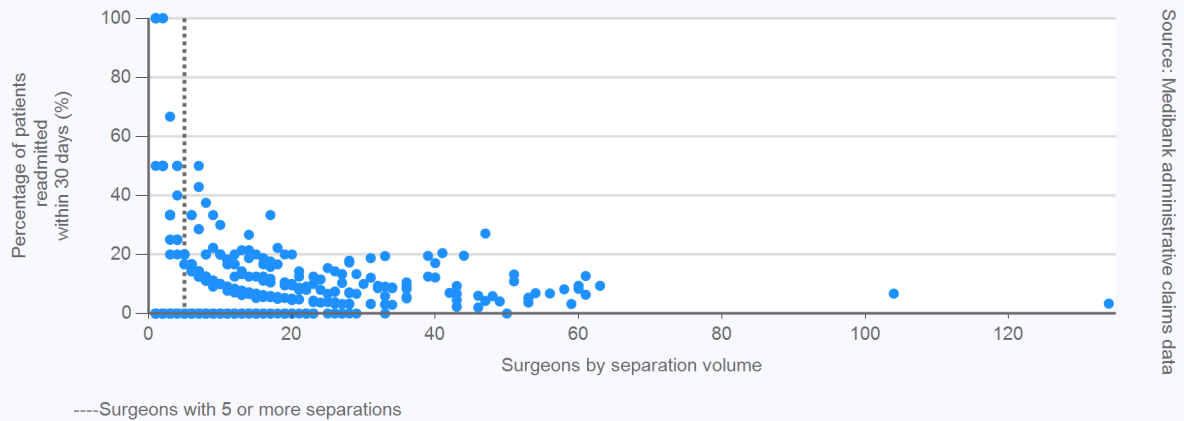
- 84 (19%) surgeons had one or more patient separations during which a Hospital Acquired Complication was identified
- The rate of Hospital Acquired Complications for a surgeon ranged between 0 per 1,000 separations to 286 per 1,000 separations with a median of 0 per 1,000 separations.

Table 3: Hospital Acquired Complications identified during the hospital separation

Description	Number recorded
Other surgical complications	61
Post-operative haemorrhage and haematoma	51
Prosthesis associated infection	3
Surgical site infection	6

What complications have you had for this procedure?

Figure 7: Percentage of patients readmitted within 30 days



Following 629 (8%) of separations patients were readmitted (for all causes)* to a hospital within 30 days. Administrative claims data does not indicate whether the readmissions were planned or unplanned. The median age of patients readmitted was 57 years, compared with a median age of 53 years for those patients not readmitted. Of the 629 separations followed by a readmission:

- 509 readmissions were to a private hospital (either the same hospital or a different one). In 42 of these separations a Hospital Acquired Complication was identified (see Table 4)
- 120 readmissions were to a public hospital (where the patient was treated as a private patient).

For the 451 surgeons who performed at least five procedures (on patients less than 80 years old), the percentage of a surgeon’s patients readmitted within 30 days ranged between 0% and 57% with a median of 6%.

Readmissions to public hospitals, where patients were treated as public patients, are not captured in these datasets.

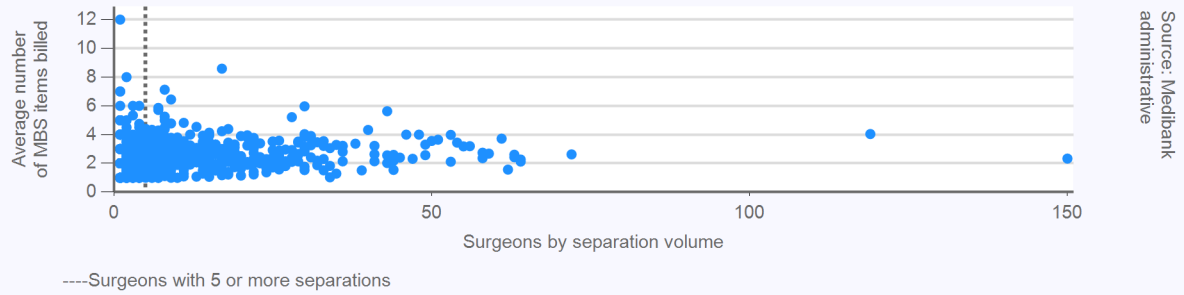
*This analysis excludes any separations where the patient was 80 years or older. Readmissions for rehabilitation, psychiatric treatment, dialysis and chemotherapy were excluded where identified.

Table 4: Hospital Acquired Complications identified on readmission

Description	Number recorded
Other surgical complications	13
Post-operative haemorrhage and haematoma	3
Prosthesis associated infection	2
Surgical site infection	24

What are the reasons for readmission for this procedure, and what is the expected rate?

Figure 8: Average number of MBS items billed



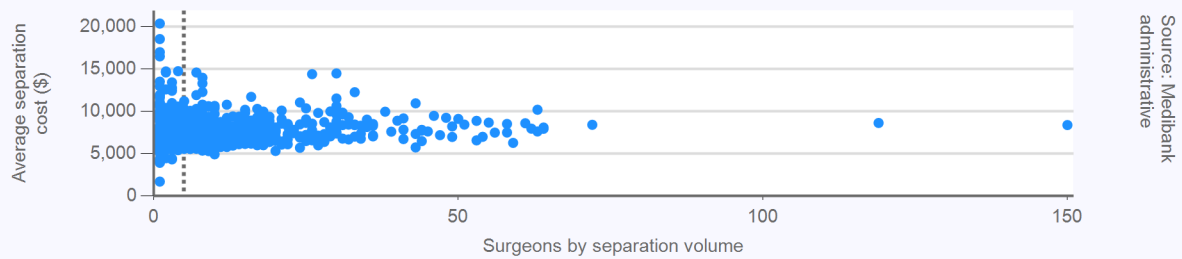
The average number of MBS items billed by a surgeon (the principal surgeon only) was 2.6 per hospital separation.

Of the 458 surgeons who performed five or more procedures, the average number of MBS items billed by a surgeon ranged between 1 and 8.6 with a median of 2.4.

Table 6: Top five MBS items billed by the surgeon (principal procedure MBS # 30445)

MBS Item number	Description	Total frequency	Frequency per separation
30445	Laparoscopic cholecystectomy (Anaes.)	8478	1.00
30439	Operative cholangiography or operative pancreatography or intra operative ultrasound of the biliary tract (including 1 or more examinations performed during the 1 operation) (Anaes.) (Assist.)	6377	0.75
00105	Professional attendance by a specialist in the practice of his or her specialty where the patient is referred to him or her each attendance subsequent to the first in a single course of treatment where that attendance is at consulting rooms, hospital or residential aged care facility	3768	0.44
30393	Laparoscopic division of adhesions in association with another intra-abdominal procedure where the time taken to divide the adhesions exceeds 45 minutes (Anaes.) (Assist.)	1272	0.15
00104	Professional attendance by a specialist in the practice of his or her specialty where the patient is referred to him or her an attendance (other than a second or subsequent attendance in a single course of treatment) where that attendance is at consulting rooms, hospital or nursing home, not being a service to which item 106 applies	1248	0.15

What are the reasons for the wide variation in the number of MBS items billed?

Figure 9: Average separation cost

----Surgeons with 5 or more separations (1 low volume (less than five separations) outlier(s) not shown on chart)

The separation cost includes the total charges for the hospital separation, including payments made by Medibank, Medicare and the patient. Costs include hospital, prostheses, medical practitioners and diagnostic services. The average total cost per hospital separation was \$7,825.

For the 458 surgeons who performed at least five procedures, the average separation cost of a surgeon ranged between \$4,931 and \$14,585 with a median of \$7,336.

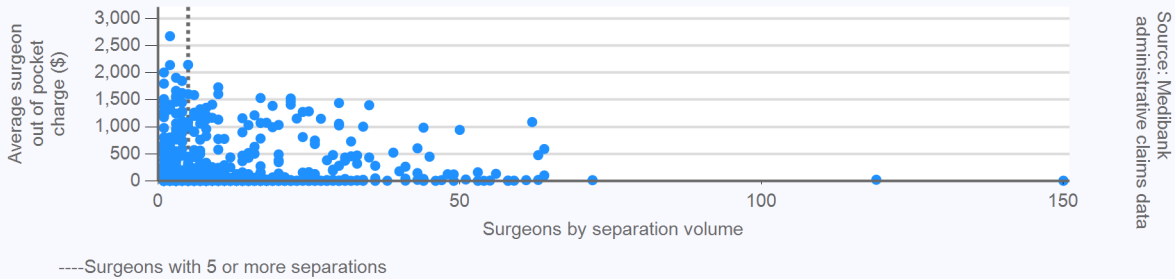
Table 7: Average separation cost by state/territory

State/territory	ACT	NSW	NT	QLD	SA	TAS	VIC	WA
Average separation cost	\$7,666	\$7,372	\$7,663	\$7,692	\$7,130	\$8,036	\$8,469	\$7,558

Are you aware of the associated costs for this procedure such as pathology, diagnostic imaging, surgical assistants, anaesthetists, hospital bed fees?

What are the reasons for variation in separation costs?

Figure 10: Average surgeon out of pocket charge



Patients were charged an out of pocket fee by the principal surgeon in 25% of separations and the average out of pocket charged was \$857. This only includes out of pocket charges that were identified on the medical claim submitted to Medibank.

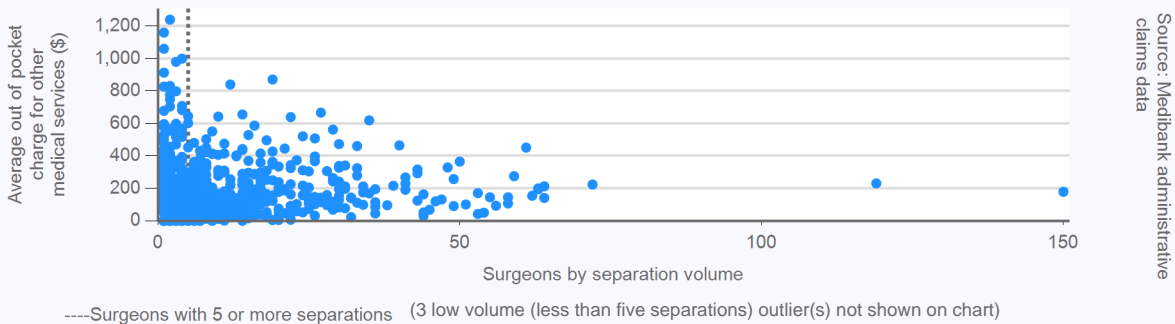
For the 458 surgeons who performed at least five procedures, 214 (47%) did not charge any of their patients an out of pocket for the hospital admission. The average out of pocket charged by these surgeons ranged from \$0 (no out of pocket charged) to \$2,148 with a median of \$4.

Table 8: Surgeon out of pocket charges by state/territory

State/territory	ACT	NSW	NT	QLD	SA	TAS	VIC	WA
% of separations with OOP	62%	35%	41%	35%	4%	17%	11%	25%
Average OOP charged	\$1,397	\$1,238	\$1,338	\$706	\$277	\$267	\$385	\$820

Why is there such variation in the average out of pocket charge?

Figure 11: Average out of pocket charge for other medical services



Patients were charged an out of pocket fee for other medical services (including charges raised by the anaesthetist, assistant surgeon and for diagnostics) in 69% of the hospital separations and the average charge was \$270. This only includes out of pocket charges that were identified on the medical claim submitted to Medibank.

For the 458 surgeons who performed at least five procedures, the average out of pocket charges received by their patients for other medical services ranged between \$0 and \$871 with a median of \$139.

Table 9: Out of pocket charges for other medical services by state/territory

State/territory	ACT	NSW	NT	QLD	SA	TAS	VIC	WA
% of separations with OOP	93%	61%	83%	69%	47%	48%	75%	80%
Average OOP charged	\$581	\$355	\$312	\$239	\$174	\$256	\$217	\$310

Why is there such variation in the average out of pocket charge?

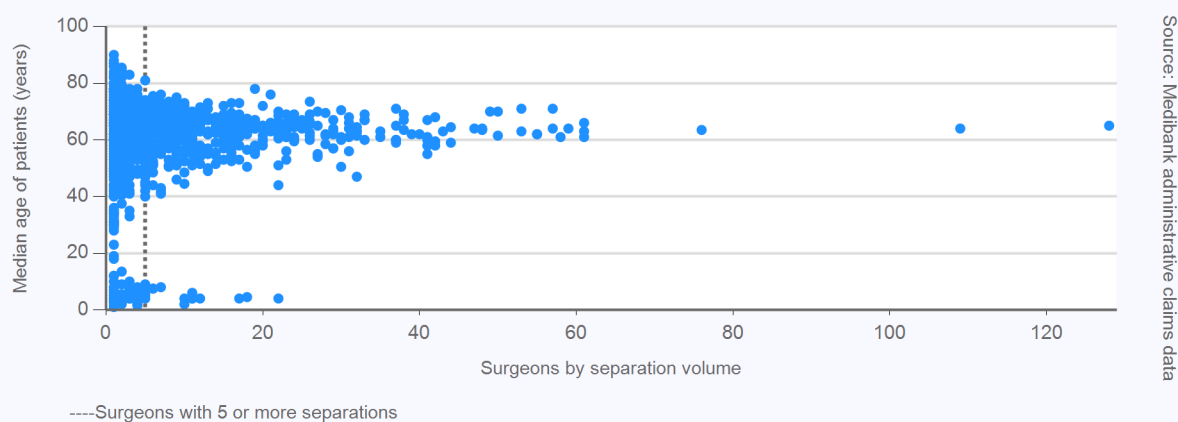
Hernia procedures

In financial years 2015 and 2016 Medibank funded 8,948 operations in private hospitals where hernia surgery was recorded as the principal procedure (highest value MBS fee from the medical claim) for the hospital admission. The analysis is limited to those 8,948 procedures. 922 surgeons (identified through the stem of their Medicare provider number) billed Medibank for those procedures. 526 (57%) of these surgeons billed Medibank for five or more procedures during financial years 2015 and 2016. Surgeon-level analysis of the indicators considered for this procedure has been limited to those surgeons with five or more patient separations, so that each surgeon has a sufficient sample of separations from which a value (e.g. an average, median or percentage) for an indicator can be reported.

Table 10: MBS Codes

Procedure	MBS Codes	Volume of Separations	Percentage of Separations	Definition
Hernia procedures	30609	4,048	45%	Femoral or inguinal hernia, laparoscopic repair of, not being a service associated with a service to which item 30612 or 30614 applies (Anaes.) (Assist.)
	30614	4,113	46%	Femoral or inguinal hernia or infantile hydrocele, repair of, not being a service to which item 30403 or 30615 applies (Anaes.) (Assist.)
	30615	787	9%	Strangulated, incarcerated or obstructed hernia, repair of, without bowel resection (Anaes.) (Assist.)

Figure 12: Median age of patients



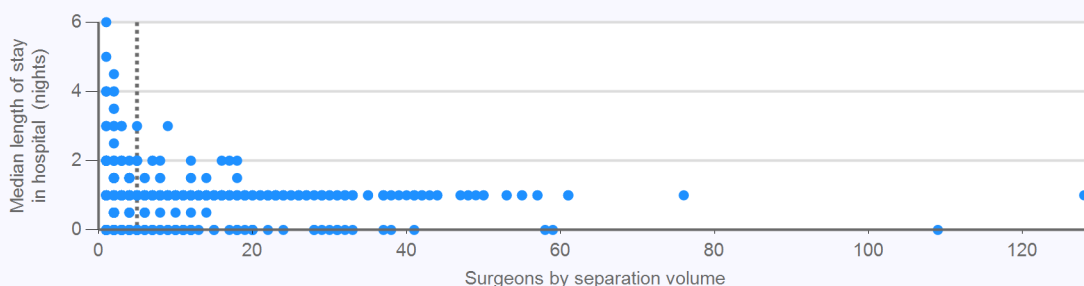
Across all the separations the median patient age was 63 years.

For the 526 surgeons who performed at least five procedures:

- The median age of a surgeon's patients ranged from 2 years to 81 years.

Is this variation in age clinically expected?

Figure 13: Median length of stay in hospital (nights)



Source: Medibank administrative claims data

----Surgeons with 5 or more separations (6 low volume (less than five separations) outlier(s) not shown on chart)

For the 526 surgeons who performed at least five procedures:

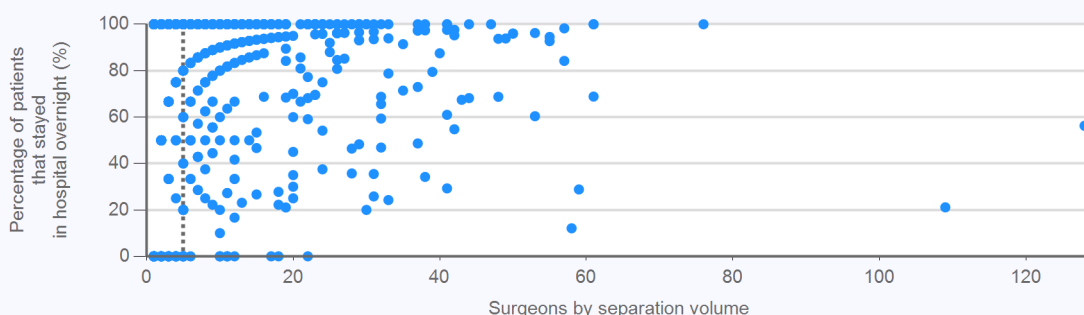
- The median number of nights that a surgeon’s patients stayed in hospital ranged between 0 nights (same day admission and discharge) and 3 nights with a median of 1 night.

Table 11: Median length of stay (nights) by state/territory

State/territory	ACT	NSW	NT	QLD	SA	TAS	VIC	WA
Length of stay	1	1	1	1	1	1	1	1

What would you consider the most effective length of stay for this procedure?

Figure 14: Percentage of patients that stayed in hospital overnight



Source: Medibank administrative claims data

----Surgeons with 5 or more separations

In 81% of the hospital separations the patient stayed in hospital for at least one night.

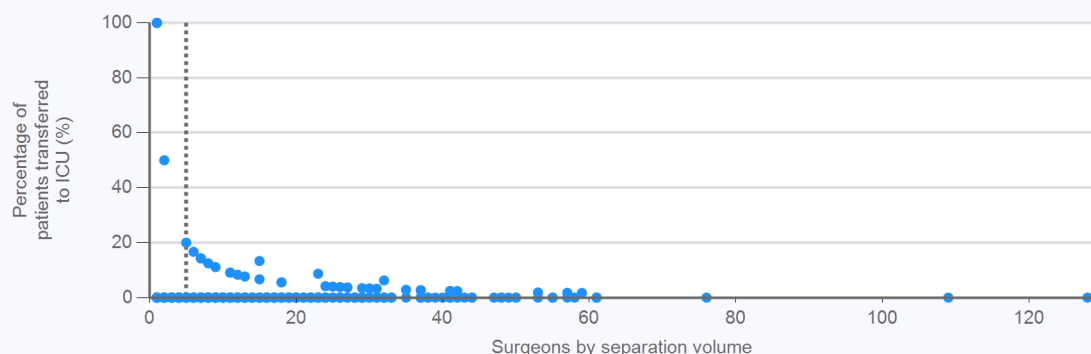
For the 526 surgeons who performed at least five procedures:

- 265 (50%) had all of their patients stay in hospital overnight
- 18 (3%) had all of their patients discharged on the same day of admission
- 243 (46%) had a mix of patients that either stayed in hospital overnight or were admitted and discharged on the same day
- The percentage of a surgeon’s patients that stayed in hospital overnight ranged between 0% and 100% with a median of 100%.

What are the reasons for a patient staying in hospital overnight following this procedure?

Why is there variation in the rate of patients that stay in hospital overnight between surgeons?

Figure 15: Percentage of patients transferred to ICU



Source: Medibank administrative claims data

---Surgeons with 5 or more separations

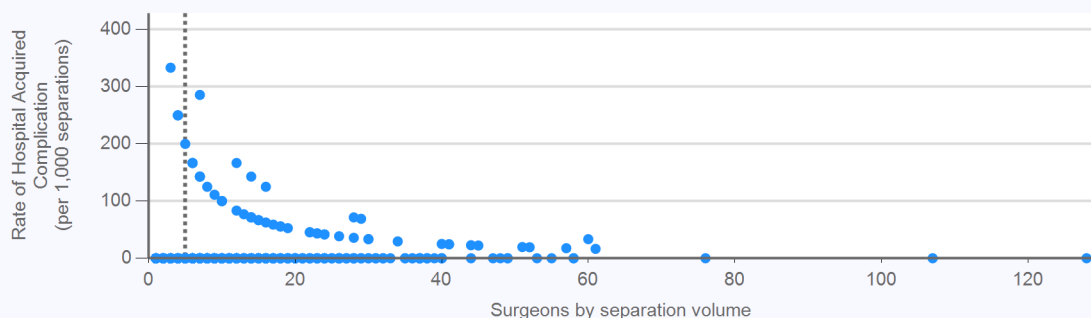
Patients were transferred to an intensive care unit (ICU) in 0.4% of overall hospital separations. Administrative claims data does not indicate whether the transfers were planned or unplanned. For 36 (90%) of these ICU transfers, the patient was in ICU for one day or less.

For the 526 surgeons who performed at least five procedures:

- 31 (6%) surgeons had one or more patient separations during which patients were transferred to ICU
- The percentage of a surgeon's patients that were transferred to ICU ranged between 0% and 20% with a median of 0%.

Given that ICU transfers could indicate a difficult post-operative recovery, what would be the expected transfer rate?

Figure 16: Rate of Hospital Acquired Complications (per 1,000 separations)



Source: Medibank administrative claims data

---Surgeons with 5 or more separations (2 low volume (less than five separations) outlier(s) not shown on chart)

Hospital Acquired Complications are a Medibank subset of 82 International Classification of Diseases (ICD) codes drawn from the Australian Commission of Safety and Quality in Health Care's list of hospital acquired complications (see Table 64). The rate of Hospital Acquired Complications was 8 per 1,000 hospital separations. Separations for which Medibank did not have a matching HCP record have been excluded from the analysis (as there was insufficient information to identify whether a Hospital Acquired Complication did or did not occur).

For the 501 surgeons who performed at least five procedures:

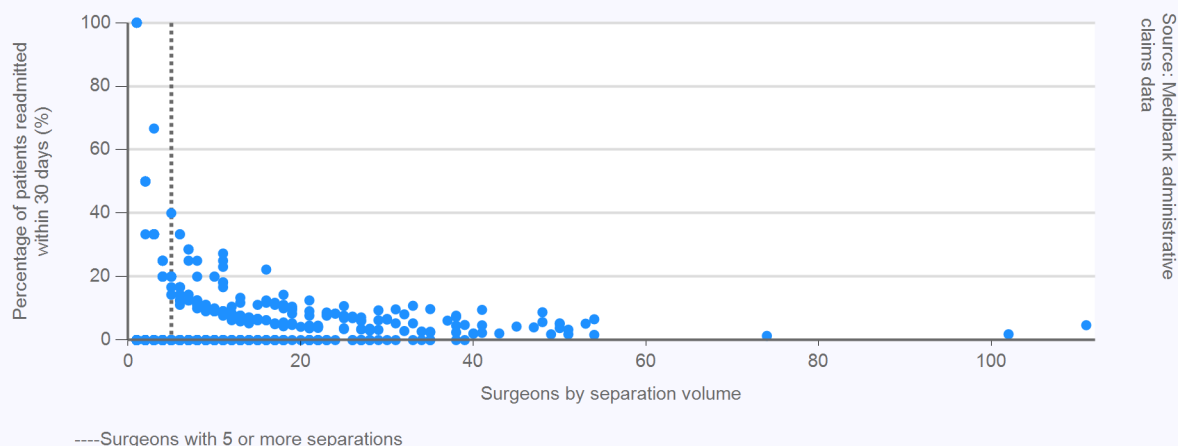
- 54 (11%) surgeons had one or more separations during which a Hospital Acquired Complication was identified
- The rate of Hospital Acquired Complications for a surgeon ranged between 0 per 1,000 separations to 286 per 1,000 separations with a median of 0 per 1,000 separations.

Table 12: Hospital Acquired Complications identified during the hospital separation

Description	Number recorded
Other surgical complications	41
Post-operative haemorrhage and haematoma	22
Surgical site infection	3

What complications have you had for this procedure?

Figure 17: Percentage of patients readmitted within 30 days



Following 345 (4%) hospital separations, patients were readmitted (for all causes)* to a hospital within 30 days. Administrative claims data does not indicate whether the readmissions were planned or unplanned. The median age of patients readmitted was 66 years, compared with a median age of 61 years for patients not readmitted. Of the 345 readmissions:

- 299 readmissions were to a private hospital (the same one or a different hospital). In 37 of these separations at least one Hospital Acquired Complication was identified (see Table 13)
- 46 readmissions were to a public hospital (where the patient was treated as a private patient).

For the 501 surgeons who performed at least five procedures (on patients less than 80 years old), the percentage of a surgeon's patients readmitted within 30 days ranged between 0% and 40% with a median of 0%.

Readmissions to public hospitals, where patients were treated as public patients, are not captured in these datasets.

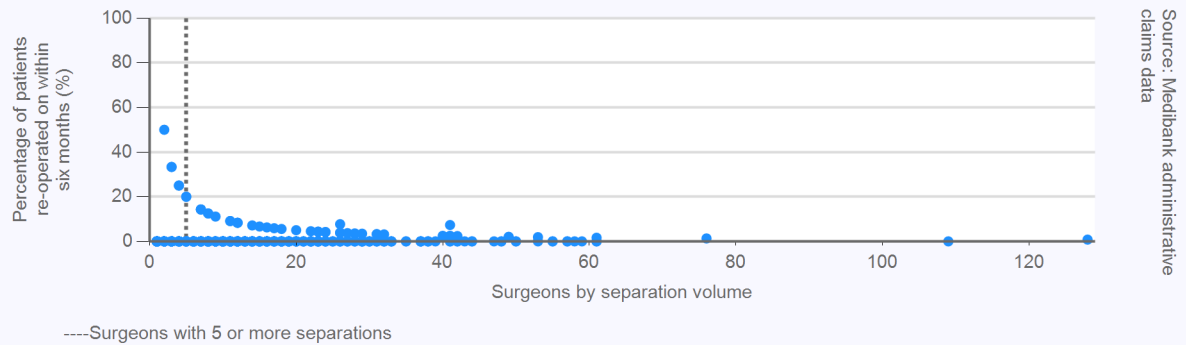
*This analysis excludes any separations where the patient was 80 years or older. Readmissions for rehabilitation, psychiatric treatment, dialysis and chemotherapy were excluded where identified.

Table 13: Hospital Acquired Complications identified on readmission

Description	Number recorded
Other surgical complications	26
Post-operative haemorrhage and haematoma	2
Prosthesis associated infection	2
Surgical site infection	7

What are the reasons for readmission for this procedure, and what is the expected rate?

Figure 18: Percentage of patients re-operated on within six months



Patients were re-operated on (same procedure*) within six months of discharge from hospital, in 51 (1%) hospital separations. There was no difference in the median age of patients re-operated on, compared with those that were not.

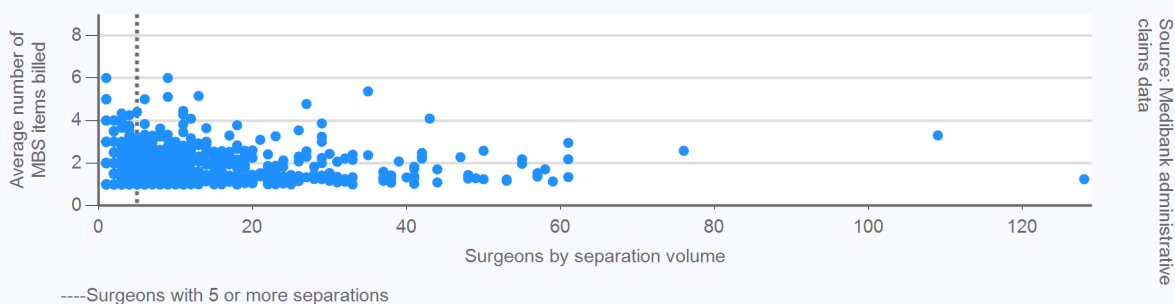
Of the 526 surgeons who performed five or more procedures:

- 43 (8%) had one or more patients that were re-operated on within six months
- The percentage of a surgeon's patients re-operated on within six months ranged between 0% and 20% with a median of 0%.

* Administrative claims data does not indicate whether the re-operation was on the same side.

What are the reasons for re-operation for this procedure, and what is the expected rate?

Figure 19: Average number of MBS items billed



The average number of MBS items billed by a surgeon (the principal surgeon only) was 1.8 per hospital separation.

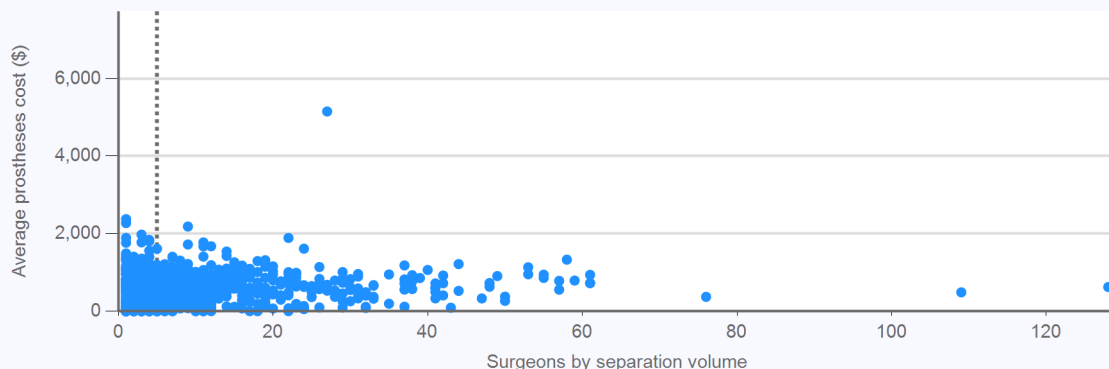
Of the 526 surgeons who performed five or more procedures, the average number of MBS items billed by a surgeon ranged between 1 and 6 with a median of 1.5.

Table 14: Top five MBS items billed by the surgeon (principal procedure MBS # 30609)

MBS Item number	Description	Total frequency	Frequency per separation
30609	Femoral or inguinal hernia, laparoscopic repair of, not being a service associated with a service to which item 30612 or 30614 applies (Anaes.) (Assist.)	5432	1.34
00105	Professional attendance by a specialist in the practice of his or her specialty where the patient is referred to him or her each attendance subsequent to the first in a single course of treatment where that attendance is at consulting rooms, hospital or residential aged care facility	1096	0.27
18262	Ilio-inguinal, iliohypogastric or genitofemoral nerves, 1 or more of, injection of an anaesthetic agent (Anaes.)	456	0.11
30621	Umbilical, epigastric or linea alba hernia, repair of, in a person 10 years of age or over (Anaes.) (Assist.)	266	0.07
00104	Professional attendance by a specialist in the practice of his or her specialty where the patient is referred to him or her an attendance (other than a second or subsequent attendance in a single course of treatment) where that attendance is at consulting rooms, hospital or nursing home, not being a service to which item 106 applies	39	0.01

What are the reasons for the wide variation in the number of MBS items billed?

Figure 20: Average prostheses cost



Source: Medibank administrative claims data

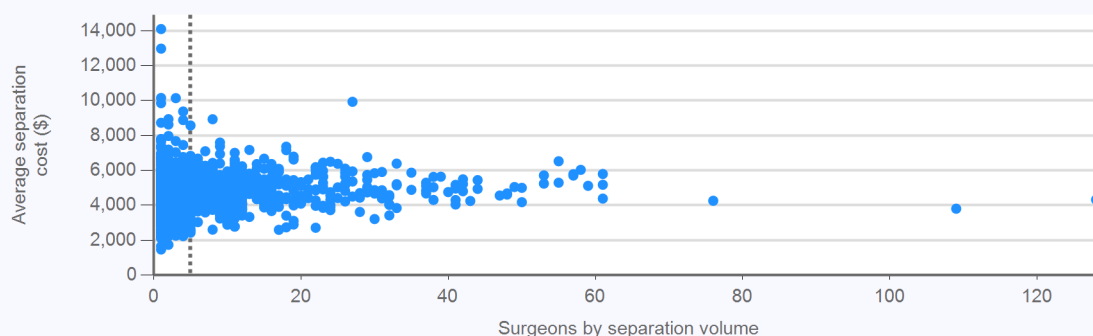
----Surgeons with 5 or more separations

The average cost of prostheses items was \$625 per hospital separation.

For the 526 surgeons who performed at least five procedures, the average cost of prostheses for a surgeon ranged between \$0 and \$5,151 with a median of \$633.

*Are you aware of the associated costs for prostheses items used for this procedure?
What are the reasons for the variation in costs between surgeons?*

Figure 21: Average separation cost



Source: Medibank administrative claims data

----Surgeons with 5 or more separations (1 low volume (less than five separations) outlier(s) not shown on chart)

The separation cost includes the total charges for the hospital separation, including payments made by Medibank, Medicare and the patient. Costs include hospital, prostheses, medical practitioners and diagnostic services. The average total cost per hospital separation was \$4,921.

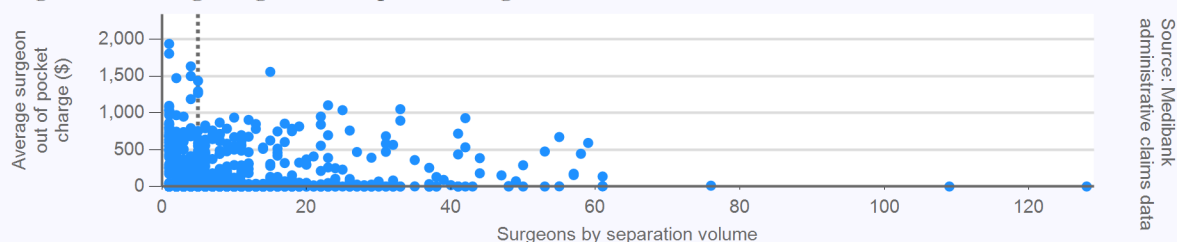
For the 526 surgeons who performed at least five procedures, the average separation cost of a surgeon ranged between \$2,430 and \$9,933 with a median of \$4,868.

Table 15: Average separation cost by state/territory

State/territory	ACT	NSW	NT	QLD	SA	TAS	VIC	WA
Average separation cost	\$4,722	\$5,050	\$4,171	\$4,929	\$4,172	\$4,534	\$5,004	\$5,011

*Are you aware of the associated costs for this procedure such as pathology, diagnostic imaging, surgical assistants, anaesthetists, hospital bed fees?
What are the reasons for variation in separation costs?*

Figure 22: Average surgeon out of pocket charge



----Surgeons with 5 or more separations (2 low volume (less than five separations) outlier(s) not shown on chart)

Patients were charged an out of pocket fee by the principal surgeon in 26% of separations and the average out of pocket charged was \$599. This only includes out of pocket charges that were identified on the medical claim submitted to Medibank.

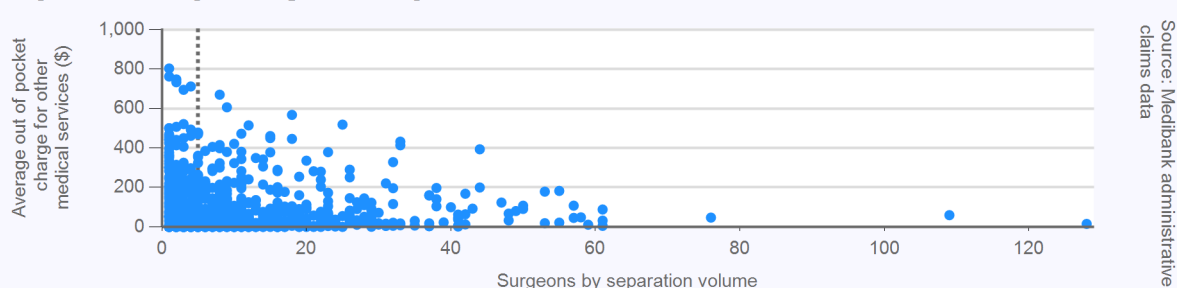
For the 526 surgeons who performed at least five procedures, 269 (51%) did not charge any of their patients an out of pocket for the hospital admission. The average out of pocket charged by these surgeons ranged from \$0 (no out of pocket charged) to \$1,556 with a median of \$0.

Table 16: Surgeon out of pocket charges by state/territory

State/territory	ACT	NSW	NT	QLD	SA	TAS	VIC	WA
% of separations with OOP	49%	37%	44%	33%	4%	14%	12%	29%
Average OOP charged	\$753	\$802	\$704	\$539	\$201	\$279	\$291	\$564

Why is there such variation in the average out of pocket charge?

Figure 23: Average out of pocket charge for other medical services



----Surgeons with 5 or more separations (1 low volume (less than five separations) outlier(s) not shown on chart)

Patients were charged an out of pocket fee for other medical services (including charges raised by the anaesthetist, assistant surgeon and for diagnostics) in 32% of the hospital separations and the average charge was \$268. This only includes out of pocket charges that were identified on the medical claim submitted to Medibank.

For the 526 surgeons who performed at least five procedures, the average out of pocket charges received by their patients for other medical services ranged between \$0 and \$670 with a median of \$48.

Table 17: Out of pocket charges for other medical services by state/territory

State/territory	ACT	NSW	NT	QLD	SA	TAS	VIC	WA
% of separations with OOP	91%	39%	61%	28%	23%	24%	31%	23%
Average OOP	\$411	\$359	\$215	\$256	\$145	\$199	\$195	\$199

Why is there such variation in the average out of pocket charge?

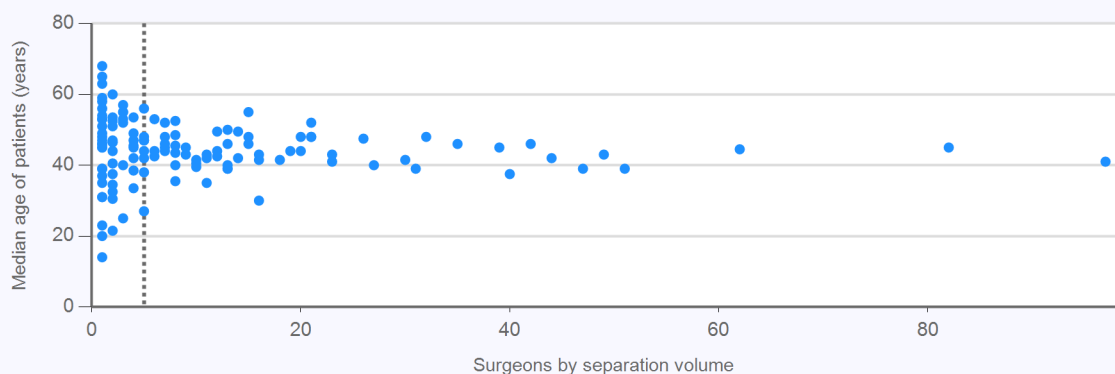
Gastric banding procedures

In financial years 2015 and 2016 Medibank funded 1,471 operations in private hospitals where gastric banding was recorded as the principal procedure (highest value MBS fee from the medical claim) for the hospital admission. The analysis is limited to those 1,471 procedures. 126 surgeons (identified through the stem of their Medicare provider number) billed Medibank for those procedures. 71 (56%) of these surgeons billed Medibank for five or more procedures during financial years 2015 and 2016. Surgeon-level analysis of the indicators considered for this procedure has been limited to those surgeons with five or more patient separations, so that each surgeon has a sufficient sample of separations from which a value (e.g. an average, median or percentage) for an indicator can be reported.

Table 18: MBS Codes

Procedure	MBS Codes	Volume of Separations	Percentage of Separations	Definition
Gastric banding procedures	31569	883	60%	Adjustable gastric band, placement of, with or without crural repair taking 45 minutes or less, for a patient with clinically severe obesity (Anaes.) (Assist.)
	31572	572	39%	Gastric bypass by Roux-en-Y including associated anastomoses, with or without crural repair taking 45 minutes or less, for a patient with clinically severe obesity not being associated with a service to which item 30515 applies (Anaes.) (Assist.)
	31581	16	1%	Gastric bypass by biliopancreatic diversion with or without duodenal switch including gastric resection and anastomoses, with or without crural repair taking 45 minutes or less, for a patient with clinically severe obesity (Anaes.) (Assist.)

Figure 24: Median age of patients



Source: Medibank administrative claims data

----Surgeons with 5 or more separations

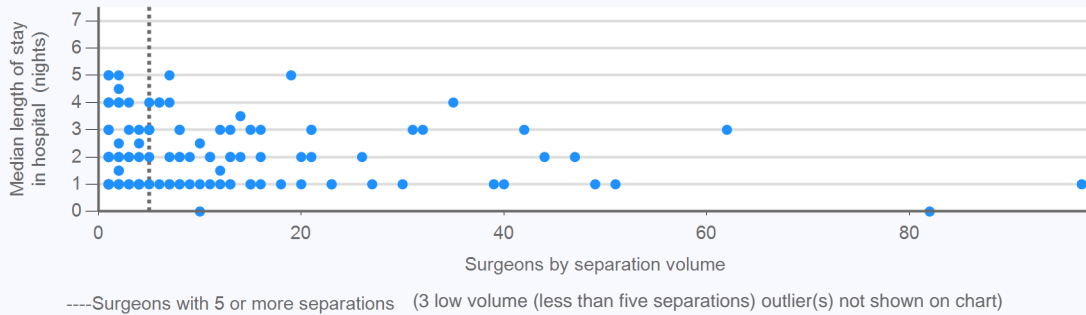
Across all the separations the median patient age was 44 years.

For the 71 surgeons who performed at least five procedures:

- The median age of a surgeon’s patients ranged from 27 years to 56 years.

Is this variation in age clinically expected?

Figure 25: Median length of stay in hospital (nights)



For the 71 surgeons who performed at least five procedures:

- The median number of nights that a surgeon’s patients stayed in hospital ranged between 0 nights (same day admission and discharge) and 5 nights with a median of 2 night.

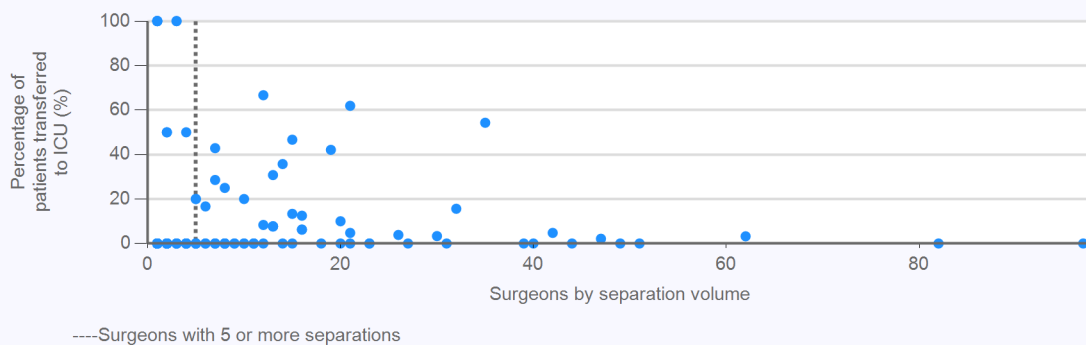
Table 19: Median length of stay (nights) by state/territory

State/territory	NSW	NT	QLD	SA	TAS	VIC	WA
Length of stay	2	NA*	2	3	NA*	1	1

* State/territory values not reported if dataset includes less than five surgeons

What would you consider the most effective length of stay for this procedure?

Figure 26: Percentage of patients transferred to ICU



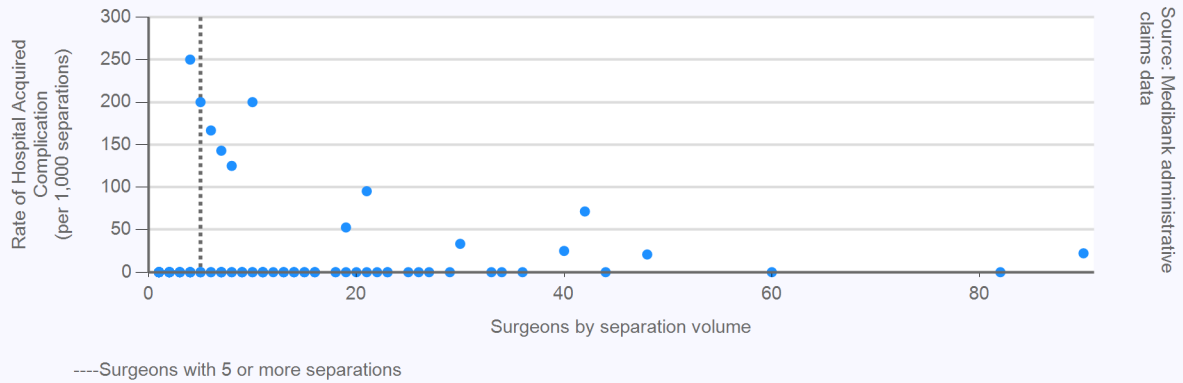
Patients were transferred to an intensive care unit (ICU) in 8% of overall hospital separations. Administrative claims data does not indicate whether the transfers were planned or unplanned. For 94 (80%) of these ICU transfers, the patient was in ICU for one day or less.

For the 71 surgeons who performed at least five procedures:

- 31 (44%) surgeons had one or more patient separations during which patients were transferred to ICU
- The percentage of a surgeon’s patients that were transferred to ICU ranged between 0% and 67% with a median of 0%.

Given that ICU transfers could indicate a difficult post-operative recovery, what would be the expected transfer rate?

Figure 27: Rate of Hospital Acquired Complications (per 1,000 separations)



Hospital Acquired Complications are a Medibank subset of 82 International Classification of Diseases (ICD) codes drawn from the Australian Commission of Safety and Quality in Health Care’s list of hospital acquired complications (see Table 64). The rate of Hospital Acquired Complications was 13 per 1,000 separations. Separations for which Medibank did not have a matching HCP record have been excluded from the analysis (as there was insufficient information to identify whether a Hospital Acquired Complication did or did not occur).

For the 67 surgeons who performed at least five procedures:

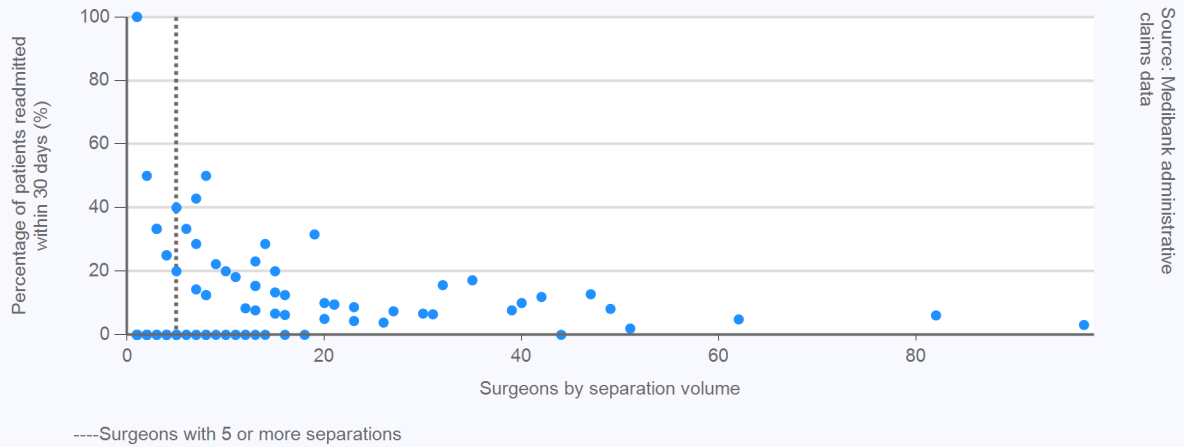
- 13 (19%) surgeons had one or more separations during which a Hospital Acquired Complication was identified
- The rate of Hospital Acquired Complications for a surgeon ranged between 0 per 1,000 separations to 200 per 1,000 separations with a median of 0 per 1,000 separations.

Table 20: Hospital Acquired Complications identified during the hospital separation

Description	Number recorded
Other surgical complications	6
Post-operative haemorrhage and haematoma	10
Prosthesis associated infection	1
Surgical site infection	1

What complications have you had for this procedure?

Figure 28: Percentage of patients readmitted within 30 days



Following 125 (8%) hospital separations, patients were readmitted (for all causes)* to a hospital within 30 days. Administrative claims data does not indicate whether the readmissions were planned or unplanned. The median age of patients readmitted was 43 years, compared with a median age of 44 years for patients not readmitted. Of the 125 readmissions:

- 104 readmissions were to a private hospital (the same one or a different hospital). In 14 of these separations at least one Hospital Acquired Complication was identified (see Table 21)
- 21 readmissions were to a public hospital (where the patient was treated as a private patient).

For the 71 surgeons who performed at least five procedures (on patients less than 80 years old), the percentage of a surgeon’s patients readmitted within 30 days ranged between 0% and 50% with a median of 7%.

Readmissions to public hospitals, where patients were treated as public patients, are not captured in these datasets.

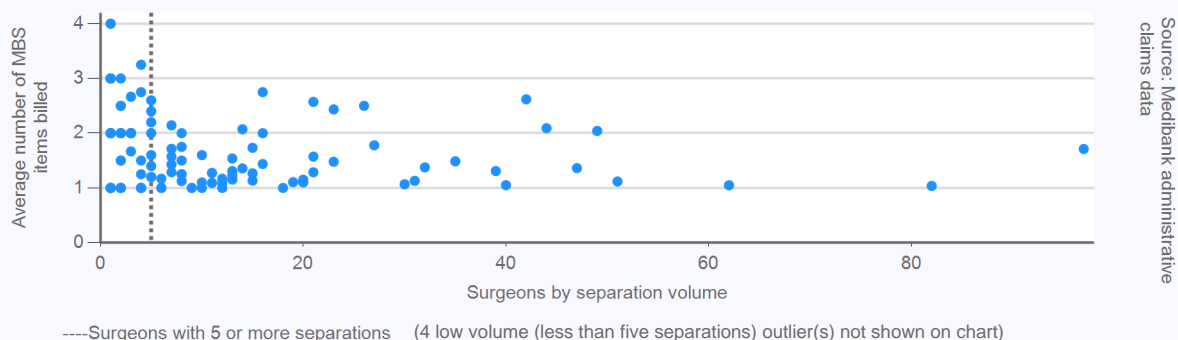
*This analysis excludes any separations where the patient was 80 years or older. Readmissions for rehabilitation, psychiatric treatment, dialysis and chemotherapy were excluded where identified.

Table 21: Hospital Acquired Complications identified on readmission

Description	Number recorded
Other surgical complications	1
Post-operative haemorrhage and haematoma	3
Prosthesis associated infection	6
Surgical site infection	4

What are the reasons for readmission for this procedure, and what is the expected rate?

Figure 29: Average number of MBS items billed



The average number of MBS items billed by a surgeon (the principal surgeon only) was 1.5 per hospital separation.

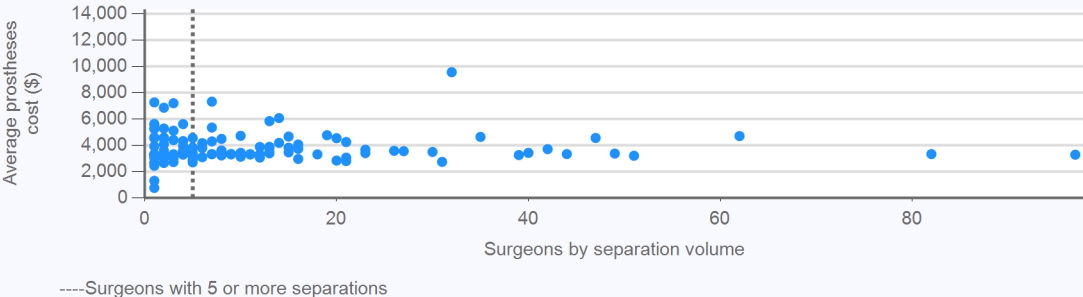
Of the 71 surgeons who performed five or more procedures, the average number of MBS items billed by a surgeon ranged between 1 and 2.8 with a median of 1.3.

Table 22: Top five MBS items billed by the surgeon (principal procedure MBS # 31569)

MBS Item number	Description	Total frequency	Frequency per separation
31569	Adjustable gastric band, placement of, with or without crural repair taking 45 minutes or less, for a patient with clinically severe obesity (Anaes.) (Assist.)	884	1.00
00105	Professional attendance by a specialist in the practice of his or her specialty where the patient is referred to him or her each attendance subsequent to the first in a single course of treatment where that attendance is at consulting rooms, hospital or residential aged care facility	128	0.14
00104	Professional attendance by a specialist in the practice of his or her specialty where the patient is referred to him or her an attendance (other than a second or subsequent attendance in a single course of treatment) where that attendance is at consulting rooms, hospital or nursing home, not being a service to which item 106 applies	58	0.07
30393	Laparoscopic division of adhesions in association with another intra-abdominal procedure where the time taken to divide the adhesions exceeds 45 minutes (Anaes.) (Assist.)	44	0.05
30473	Oesophagoscopy (not being a service to which item 41816 or 41822 applies), gastroscopy, duodenoscopy or panendoscopy (1 or more such procedures), with or without biopsy, not being a service associated with a service to which item 30476 or 30478 applies (Anaes.)	44	0.05

What are the reasons for the wide variation in the number of MBS items billed?

Figure 30: Average prostheses cost

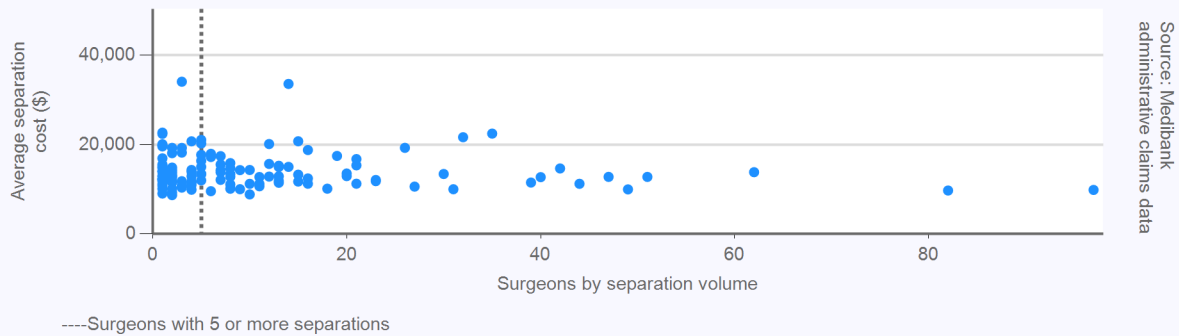


The average cost of prostheses items was \$3,825 per hospital separation.

For the 71 surgeons who performed at least five procedures, the average cost of prostheses for a surgeon ranged between \$2,699 and \$9,569 with a median of \$3,452.

*Are you aware of the associated costs for prostheses items used for this procedure?
What are the reasons for the variation in costs between surgeons?*

Figure 31: Average separation cost



The separation cost includes the total charges for the hospital separation, including payments made by Medibank, Medicare and the patient. Costs include hospital, prostheses, medical practitioners and diagnostic services. The average total cost per hospital separation was \$13,558.

For the 71 surgeons who performed at least five procedures, the average separation cost of a surgeon ranged between \$8,878 and \$33,602 with a median of \$13,403.

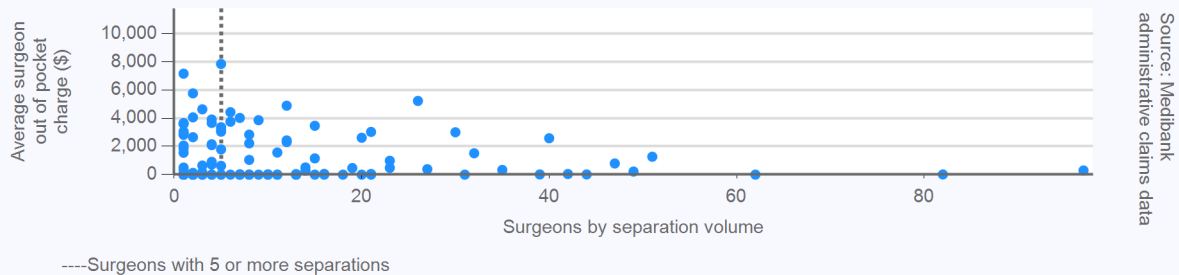
Table 23: Average separation cost by state/territory

State/territory	NSW	NT	QLD	SA	TAS	VIC	WA
Average separation cost	\$13,111	NA*	\$14,764	\$13,065	NA*	\$14,361	\$11,833

* State/territory values not reported if dataset includes less than five surgeons

Are you aware of the associated costs for this procedure such as pathology, diagnostic imaging, surgical assistants, anaesthetists, hospital bed fees? What are the reasons for variation in separation costs?

Figure 32: Average surgeon out of pocket charge



Patients were charged an out of pocket fee by the principal surgeon in 32% of separations and the average out of pocket charged was \$2,815. This only includes out of pocket charges that were identified on the medical claim submitted to Medibank.

For the 71 surgeons who performed at least five procedures, 24 (34%) did not charge any of their patients an out of pocket for the hospital admission. The average out of pocket charged by these surgeons ranged from \$0 (no out of pocket charged) to \$7,831 with a median of \$218.

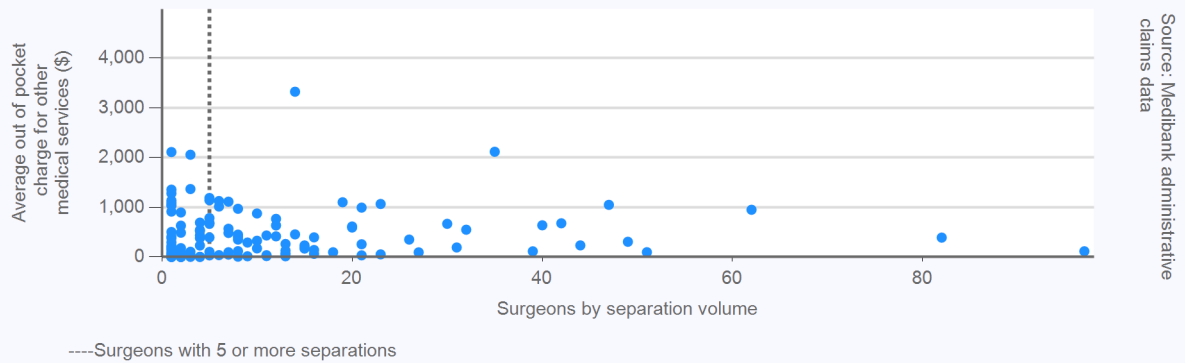
Table 24: Surgeon out of pocket charges by state/territory

State/territory	NSW	NT	QLD	SA	TAS	VIC	WA
% of separations with OOP	41%	NA*	56%	6%	NA*	26%	18%
Average OOP charged	\$3,247	NA*	\$3,249	\$2,225	NA*	\$2,901	\$1,719

* State/territory values not reported if dataset includes less than five surgeons

Why is there such variation in the average out of pocket charge?

Figure 33: Average out of pocket charge for other medical services



Patients were charged an out of pocket fee for other medical services (including charges raised by the anaesthetist, assistant surgeon and for diagnostics) in 68% of the hospital separations and the average charge was \$701. This only includes out of pocket charges that were identified on the medical claim submitted to Medibank.

For the 71 surgeons who performed at least five procedures, the average out of pocket charges received by their patients for other medical services ranged between \$4 and \$3,324 with a median of \$348.

Table 25: Out of pocket charges for other medical services by state/territory

State/territory	NSW	NT	QLD	SA	TAS	VIC	WA
% of separations with OOP	63%	NA*	77%	60%	NA*	76%	55%
Average OOP	\$832	NA*	\$644	\$789	NA*	\$806	\$514

* State/territory values not reported if dataset includes less than five surgeons

Why is there such variation in the average out of pocket charge?

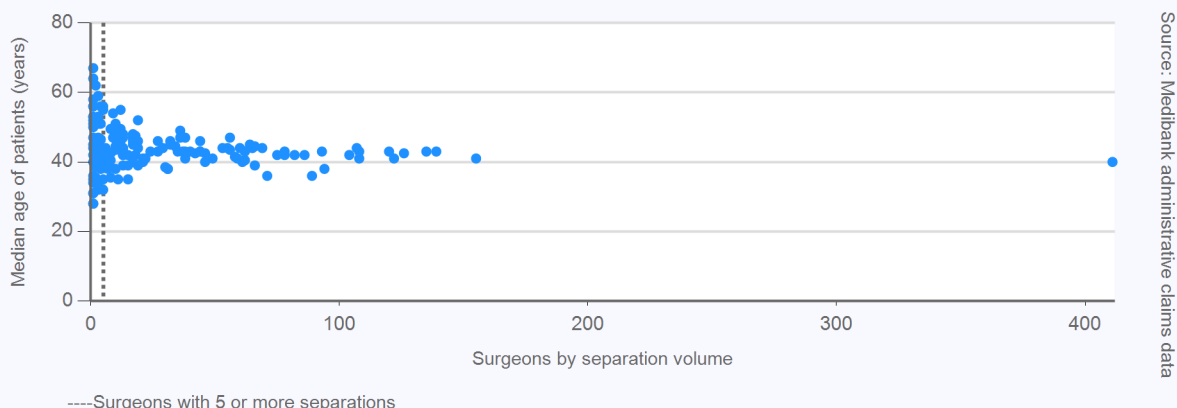
Gastric sleeve procedures

In financial years 2015 and 2016 Medibank funded 5,016 operations in private hospitals where gastric sleeve was recorded as the principal procedure (highest value MBS fee from the medical claim) for the hospital admission. The analysis is limited to those 5,016 procedures. 169 surgeons (identified through the stem of their Medicare provider number) billed Medibank for those procedures. 116 (69%) of these surgeons billed Medibank for five or more procedures during financial years 2015 and 2016. Surgeon-level analysis of the indicators considered for this procedure has been limited to those surgeons with five or more patient separations, so that each surgeon has a sufficient sample of separations from which a value (e.g. an average, median or percentage) for an indicator can be reported.

Table 26: MBS Codes

Procedure	MBS Codes	Volume of Separations	Percentage of Separations	Definition
Gastric sleeve procedures	31575	5,016	100%	Sleeve gastrectomy, with or without crural repair taking 45 minutes or less, for a patient with clinically severe obesity (Anaes.) (Assist.)

Figure 34: Median age of patients



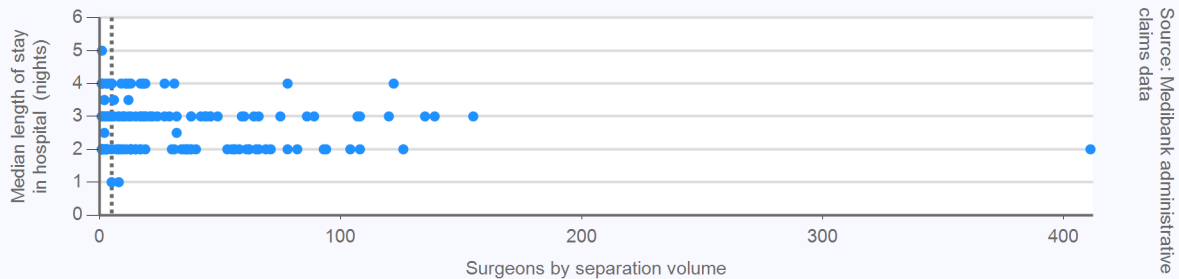
Across all the separations the median patient age was 42 years.

For the 116 surgeons who performed at least five procedures:

- The median age of a surgeon's patients ranged from 32 years to 56 years.

Is this variation in age clinically expected?

Figure 35: Median length of stay in hospital (nights)



Source: Medibank administrative claims data

----Surgeons with 5 or more separations

For the 116 surgeons who performed at least five procedures:

- The median number of nights that a surgeon’s patients stayed in hospital ranged between 1 night (same day admission and discharge) and 4 nights with a median of 3 night.

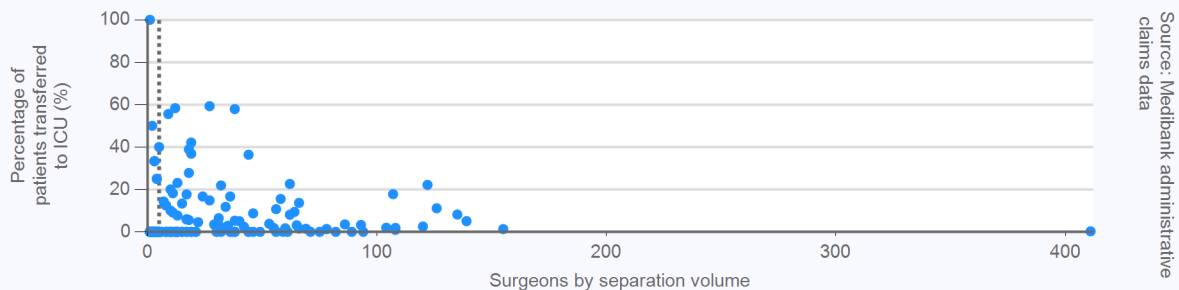
Table 27: Median length of stay (nights) by state/territory

State/territory	ACT	NSW	NT	QLD	SA	TAS	VIC	WA
Length of stay	NA*	3	NA*	3	3	NA*	3	3

* State/territory values not reported if dataset includes less than five surgeons

What would you consider the most effective length of stay for this procedure?

Figure 36: Percentage of patients transferred to ICU



Source: Medibank administrative claims data

----Surgeons with 5 or more separations

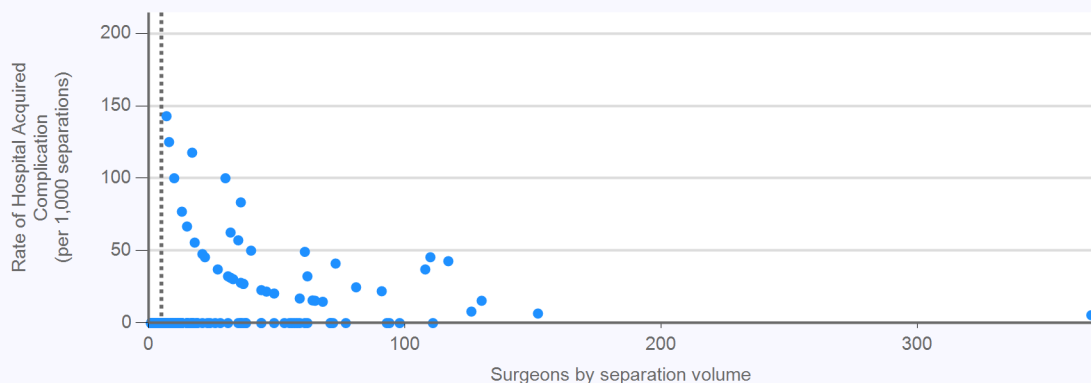
Patients were transferred to an intensive care unit (ICU) in 6% of overall hospital separations. Administrative claims data does not indicate whether the transfers were planned or unplanned. For 281 (90%) of these ICU transfers, the patient was in ICU for one day or less.

For the 116 surgeons who performed at least five procedures:

- 65 (56%) surgeons had one or more patient separations during which patients were transferred to ICU
- The percentage of a surgeon’s patients that were transferred to ICU ranged between 0% and 59% with a median of 2%.

Given that ICU transfers could indicate a difficult post-operative recovery, what would be the expected transfer rate?

Figure 37: Rate of Hospital Acquired Complications (per 1,000 separations)



----Surgeons with 5 or more separations (5 low volume (less than five separations) outlier(s) not shown on chart)

Hospital Acquired Complications are a Medibank subset of 82 International Classification of Diseases (ICD) codes drawn from the Australian Commission of Safety and Quality in Health Care’s list of hospital acquired complications (see Table 64). The rate of Hospital Acquired Complications was 16 per 1,000 separations. Separations for which Medibank did not have a matching HCP record have been excluded from the analysis (as there was insufficient information to identify whether a Hospital Acquired Complication did or did not occur).

For the 113 surgeons who performed at least five procedures:

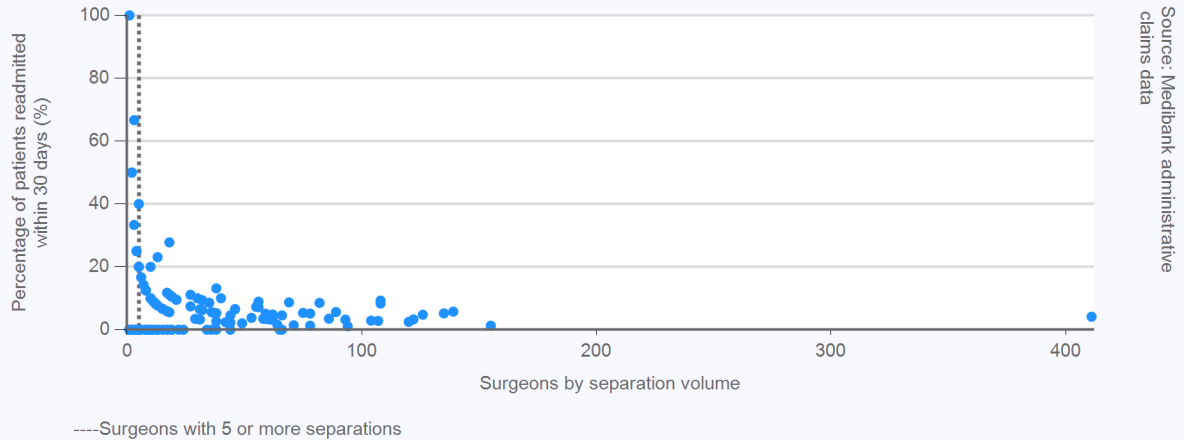
- 41 (36%) surgeons had one or more separations during which a Hospital Acquired Complication was identified
- The rate of Hospital Acquired Complications for a surgeon ranged between 0 per 1,000 separations to 143 per 1,000 separations with a median of 0 per 1,000 separations.

Table 28: Hospital Acquired Complications identified during the hospital separation

Description	Number recorded
Other surgical complications	34
Post-operative haemorrhage and haematoma	28
Surgical site infection	4

What complications have you had for this procedure?

Figure 38: Percentage of patients readmitted within 30 days



Following 239 (5%) hospital separations, patients were readmitted (for all causes)* to a hospital within 30 days. Administrative claims data does not indicate whether the readmissions were planned or unplanned. The median age of patients readmitted was 44 years, compared with a median age of 42 years for patients not readmitted. Of the 239 readmissions:

- 173 readmissions were to a private hospital (the same one or a different hospital). In 23 of these separations at least one Hospital Acquired Complication was identified (see Table 29)
- 66 readmissions were to a public hospital (where the patient was treated as a private patient).

For the 116 surgeons who performed at least five procedures (on patients less than 80 years old), the percentage of a surgeon’s patients readmitted within 30 days ranged between 0% and 40% with a median of 5%.

Readmissions to public hospitals, where patients were treated as public patients, are not captured in these datasets.

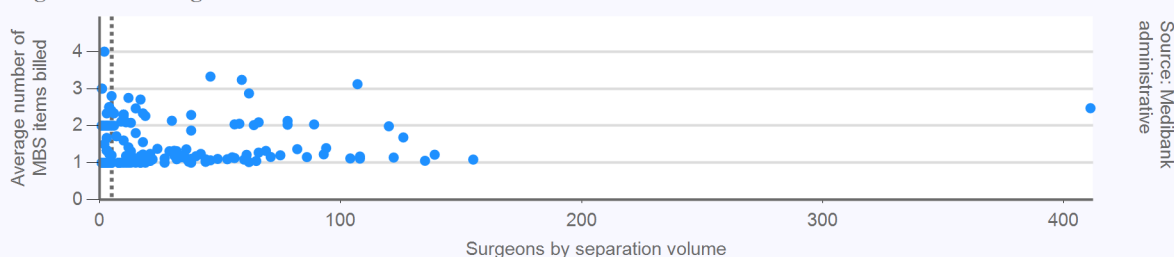
*This analysis excludes any separations where the patient was 80 years or older. Readmissions for rehabilitation, psychiatric treatment, dialysis and chemotherapy were excluded where identified.

Table 29: Hospital Acquired Complications identified on readmission

Description	Number recorded
Other surgical complications	7
Post-operative haemorrhage and haematoma	3
Surgical site infection	13

What are the reasons for readmission for this procedure, and what is the expected rate?

Figure 39: Average number of MBS items billed



----Surgeons with 5 or more separations (4 low volume (less than five separations) outlier(s) not shown on chart)

The average number of MBS items billed by a surgeon (the principal surgeon only) was 1.6 per hospital separation.

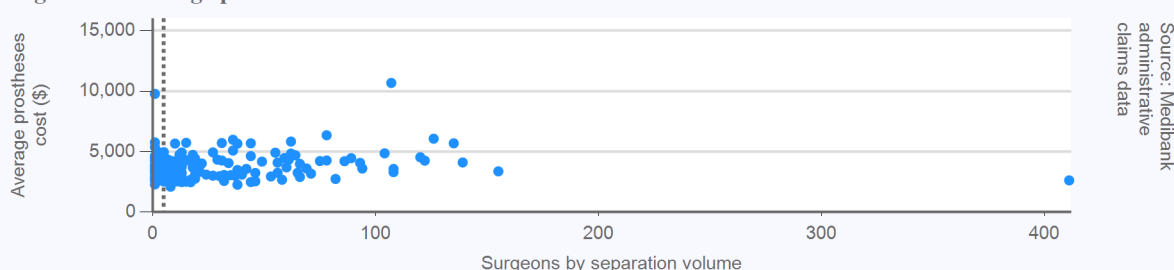
Of the 116 surgeons who performed five or more procedures, the average number of MBS items billed by a surgeon ranged between 1 and 3.3 with a median of 1.2.

Table 30: Top five MBS items billed by the surgeon (principal procedure MBS # 31575)

MBS Item number	Description	Total frequency	Frequency per separation
31575	Sleeve gastrectomy, with or without crural repair taking 45 minutes or less, for a patient with clinically severe obesity (Anaes.) (Assist.)	5015	1.00
00105	Professional attendance by a specialist in the practice of his or her specialty where the patient is referred to him or her each attendance subsequent to the first in a single course of treatment where that attendance is at consulting rooms, hospital or residential aged care facility	1362	0.27
30393	Laparoscopic division of adhesions in association with another intra-abdominal procedure where the time taken to divide the adhesions exceeds 45 minutes (Anaes.) (Assist.)	792	0.16
30473	Oesophagoscopy (not being a service to which item 41816 or 41822 applies), gastroscopy, duodenoscopy or panendoscopy (1 or more such procedures), with or without biopsy, not being a service associated with a service to which item 30476 or 30478 applies (Anaes.)	111	0.02
30530	Antireflux operation by cardiopexy, with or without fundoplasty (Anaes.) (Assist.)	99	0.02

What are the reasons for the wide variation in the number of MBS items billed?

Figure 40: Average prostheses cost



----Surgeons with 5 or more separations

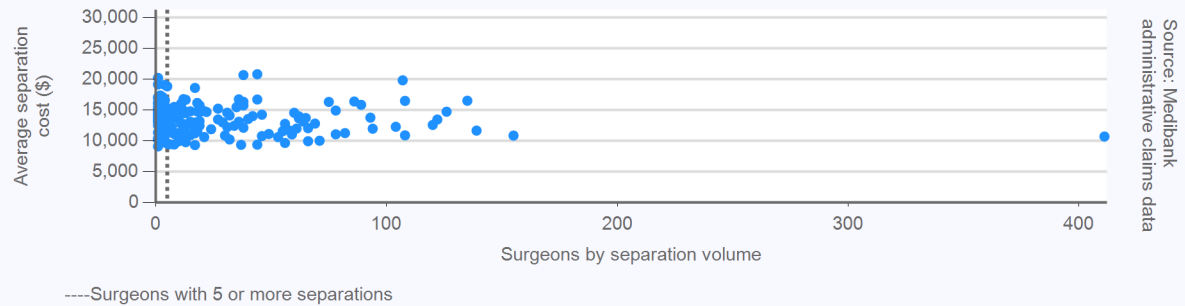
The average cost of prostheses items was \$4,043 per hospital separation.

For the 116 surgeons who performed at least five procedures, the average cost of prostheses for a surgeon ranged between \$2,098 and \$10,673 with a median of \$3,773.

Are you aware of the associated costs for prostheses items used for this procedure?

What are the reasons for the variation in costs between surgeons?

Figure 41: Average separation cost



The separation cost includes the total charges for the hospital separation, including payments made by Medibank, Medicare and the patient. Costs include hospital, prostheses, medical practitioners and diagnostic services. The average total cost per hospital separation was \$13,216.

For the 116 surgeons who performed at least five procedures, the average separation cost of a surgeon ranged between \$9,360 and \$20,848 with a median of \$13,157.

Table 31: Average separation cost by state/territory

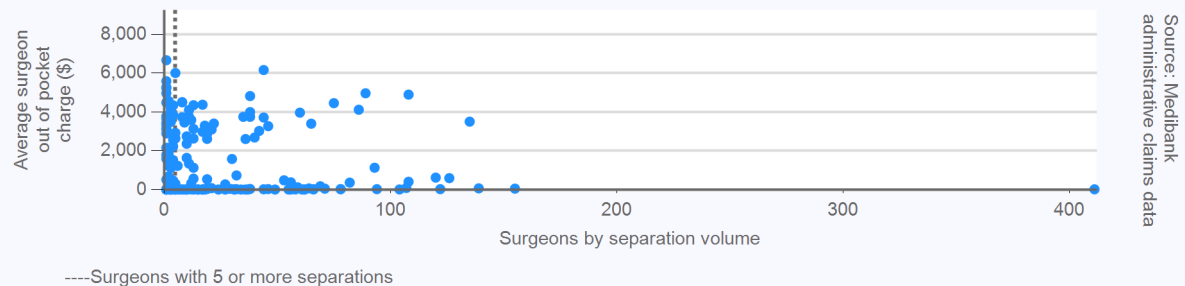
State/territory	ACT	NSW	NT	QLD	SA	TAS	VIC	WA
Average separation cost	NA*	\$12,082	NA*	\$13,801	\$13,190	NA*	\$13,177	\$13,951

* State/territory values not reported if dataset includes less than five surgeons

Are you aware of the associated costs for this procedure such as pathology, diagnostic imaging, surgical assistants, anaesthetists, hospital bed fees?

What are the reasons for variation in separation costs?

Figure 42: Average surgeon out of pocket charge



Patients were charged an out of pocket fee by the principal surgeon in 36% of separations and the average out of pocket charged was \$3,206. This only includes out of pocket charges that were identified on the medical claim submitted to Medibank.

For the 116 surgeons who performed at least five procedures, 27 (23%) did not charge any of their patients an out of pocket for the hospital admission. The average out of pocket charged by these surgeons ranged from \$0 (no out of pocket charged) to \$6,157 with a median of \$141.

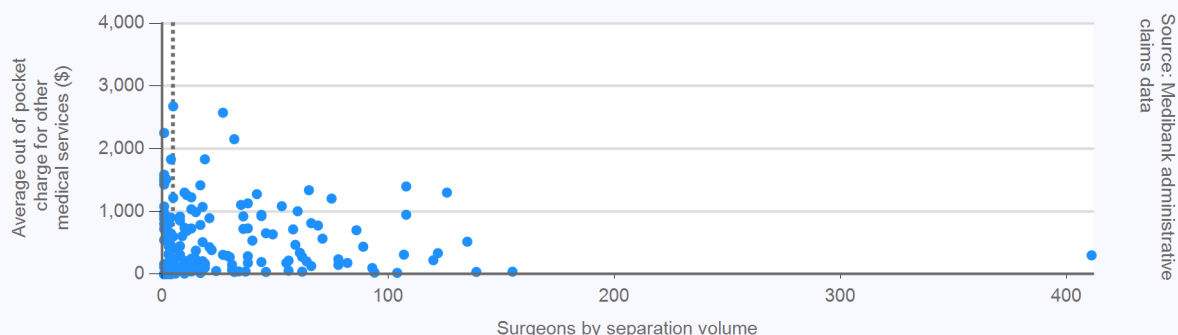
Table 32: Surgeon out of pocket charges by state/territory

State/territory	ACT	NSW	NT	QLD	SA	TAS	VIC	WA
% of separations with OOP	NA*	34%	NA*	45%	3%	NA*	27%	38%
Average OOP charged	NA*	\$3,066	NA*	\$3,767	\$434	NA*	\$2,101	\$2,700

* State/territory values not reported if dataset includes less than five surgeons

Why is there such variation in the average out of pocket charge?

Figure 43: Average out of pocket charge for other medical services



----Surgeons with 5 or more separations (1 low volume (less than five separations) outlier(s) not shown on chart)

Patients were charged an out of pocket fee for other medical services (including charges raised by the anaesthetist, assistant surgeon and for diagnostics) in 69% of the hospital separations and the average charge was \$708. This only includes out of pocket charges that were identified on the medical claim submitted to Medibank.

For the 116 surgeons who performed at least five procedures, the average out of pocket charges received by their patients for other medical services ranged between \$9 and \$2,675 with a median of \$309.

Table 33: Out of pocket charges for other medical services by state/territory

State/territory	ACT	NSW	NT	QLD	SA	TAS	VIC	WA
% of separations with OOP	NA*	56%	NA*	82%	51%	NA*	75%	69%
Average OOP	NA*	\$770	NA*	\$700	\$202	NA*	\$806	\$634

* State/territory values not reported if dataset includes less than five surgeons

Why is there such variation in the average out of pocket charge?

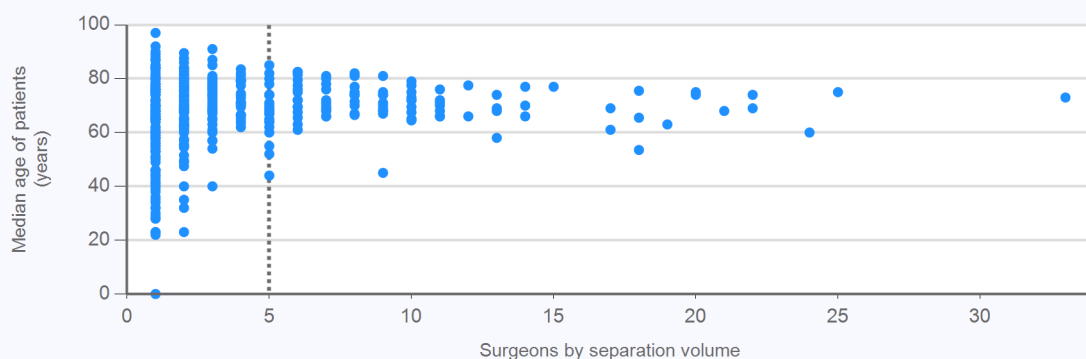
Bowel resection procedures

In financial years 2015 and 2016 Medibank funded 1,604 operations in private hospitals where bowel resection was recorded as the principal procedure (highest value MBS fee from the medical claim) for the hospital admission. The analysis is limited to those 1,604 procedures. 388 surgeons (identified through the stem of their Medicare provider number) billed Medibank for those procedures. 115 (30%) of these surgeons billed Medibank for five or more procedures during financial years 2015 and 2016. Surgeon-level analysis of the indicators considered for this procedure has been limited to those surgeons with five or more patient separations, so that each surgeon has a sufficient sample of separations from which a value (e.g. an average, median or percentage) for an indicator can be reported.

Table 34: MBS Codes

Procedure	MBS Codes	Volume of Separations	Percentage of Separations	Definition
Bowel resection procedures	32003	1,604	100%	Large intestine, resection of, with anastomosis, including right hemicolectomy (Anaes.) (Assist.)

Figure 44: Median age of patients



Source: Medibank administrative claims data

----Surgeons with 5 or more separations

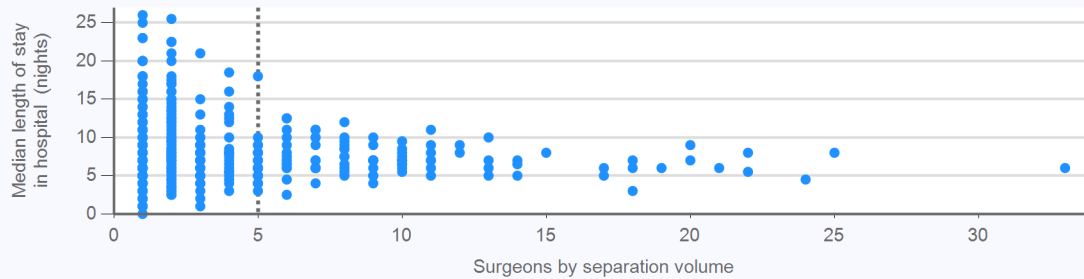
Across all the separations the median patient age was 70 years.

For the 115 surgeons who performed at least five procedures:

- The median age of a surgeon's patients ranged from 44 years to 85 years.

Is this variation in age clinically expected?

Figure 45: Median length of stay in hospital (nights)



Source: Medibank administrative claims data

----Surgeons with 5 or more separations (2 low volume (less than five separations) outlier(s) not shown on chart)

For the 115 surgeons who performed at least five procedures:

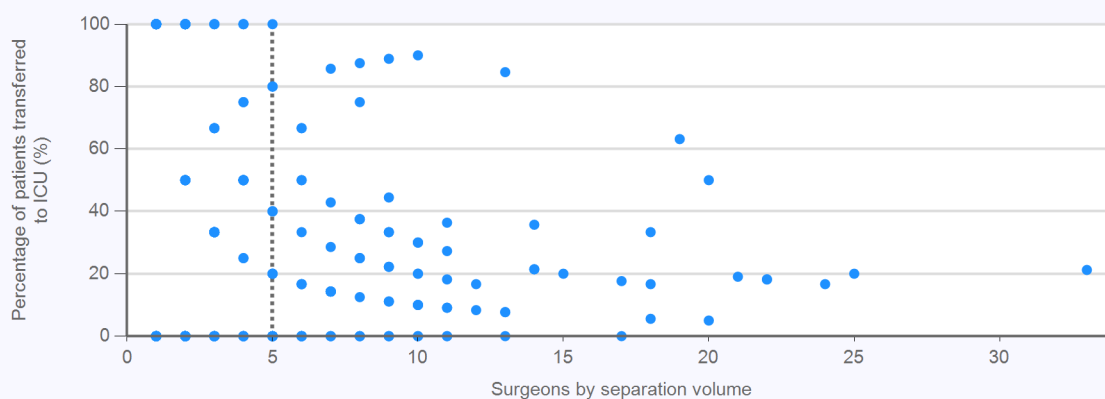
- The median number of nights that a surgeon's patients stayed in hospital ranged between 3 nights and 18 nights with a median of 7 night.

Table 35: Median length of stay (nights) by state/territory

State/territory	ACT	NSW	NT	QLD	SA	TAS	VIC	WA
Length of stay	7	7	8.5	6	7	7	7	6

What would you consider the most effective length of stay for this procedure?

Figure 46: Percentage of patients transferred to ICU



Source: Medibank administrative claims data

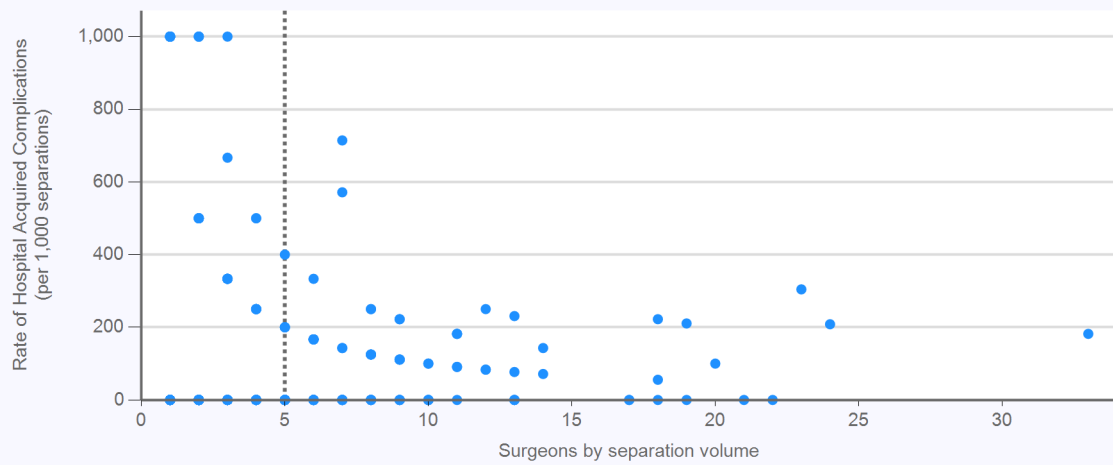
----Surgeons with 5 or more separations

Patients were transferred to an intensive care unit (ICU) in 23% of overall hospital separations. Administrative claims data does not indicate whether the transfers were planned or unplanned. For 217 (60%) of these ICU transfers, the patient was in ICU for one day or less.

- The percentage of a surgeon's patients that were transferred to ICU ranged between 0% and 100% with a median of 17%.

Given that ICU transfers could indicate a difficult post-operative recovery, what would be the expected transfer rate?

Figure 47: Rate of Hospital Acquired Complications (per 1,000 separations)



Source: Medibank administrative claims data

----Surgeons with 5 or more separations (3 low volume (less than five separations) outlier(s) not shown on chart)

Hospital Acquired Complications are a Medibank subset of 82 International Classification of Diseases (ICD) codes drawn from the Australian Commission of Safety and Quality in Health Care’s list of hospital acquired complications (see Table 64). The rate of Hospital Acquired Complications was 96 per 1,000 hospital separations. Separations for which Medibank did not have a matching HCP record have been excluded from the analysis (as there was insufficient information to identify whether a Hospital Acquired Complication did or did not occur).

For the 104 surgeons who performed at least five procedures:

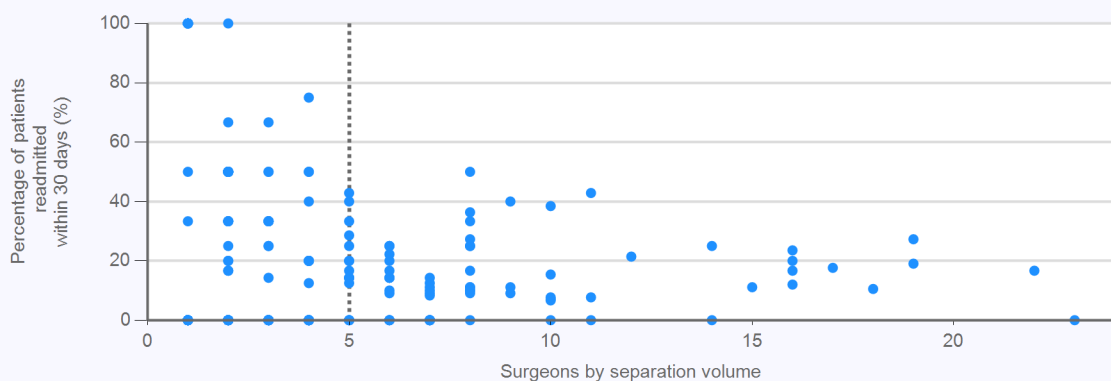
- 52 (50%) surgeons had one or more patient separations during which a Hospital Acquired Complication was identified
- The rate of Hospital Acquired Complications for a surgeon ranged between 0 per 1,000 separations to 714 per 1,000 separations with a median of 0 per 1,000 separations.

Table 36: Hospital Acquired Complications identified during the hospital separation

Description	Number recorded
Other surgical complications	54
Post-operative haemorrhage and haematoma	32
Prosthesis associated infection	10
Surgical site infection	44

What complications have you had for this procedure?

Figure 48: Percentage of patients readmitted within 30 days



Source: Medibank administrative claims data

----Surgeons with 5 or more separations

Following 216 (18%) of separations patients were readmitted (for all causes)* to a hospital within 30 days. Administrative claims data does not indicate whether the readmissions were planned or unplanned. The median age of patients readmitted was 66 years, compared with a median age of 66 years for those patients not readmitted. Of the 216 separations followed by a readmission:

- 177 readmissions were to a private hospital (either the same hospital or a different one). In 31 of these separations a Hospital Acquired Complication was identified (see Table 37)
- 39 readmissions were to a public hospital (where the patient was treated as a private patient).

For the 82 surgeons who performed at least five procedures (on patients less than 80 years old), the percentage of a surgeon’s patients readmitted within 30 days ranged between 0% and 60% with a median of 17%.

Readmissions to public hospitals, where patients were treated as public patients, are not captured in these datasets.

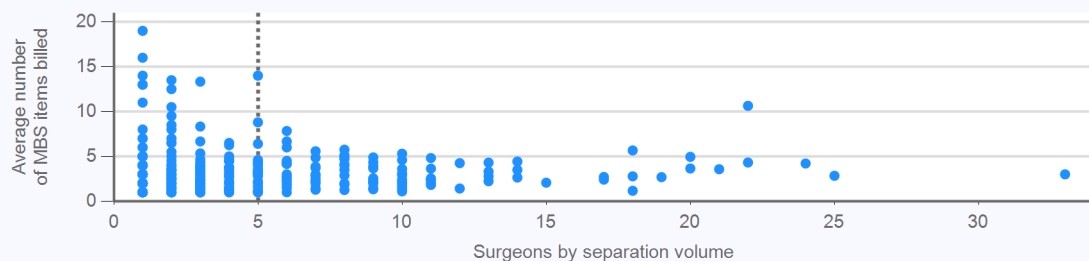
*This analysis excludes any separations where the patient was 80 years or older. Readmissions for rehabilitation, psychiatric treatment, dialysis and chemotherapy were excluded where identified.

Table 37: Hospital Acquired Complications identified on readmission

Description	Number recorded
Other surgical complications	6
Post-operative haemorrhage and haematoma	3
Prosthesis associated infection	1
Stage III ulcer	1
Surgical site infection	20

What are the reasons for readmission for this procedure, and what is the expected rate?

Figure 49: Average number of MBS items billed



----Surgeons with 5 or more separations (1 low volume (less than five separations) outlier(s) not shown on chart)

The average number of MBS items billed by a surgeon (the principal surgeon only) was 3.3 per hospital separation.

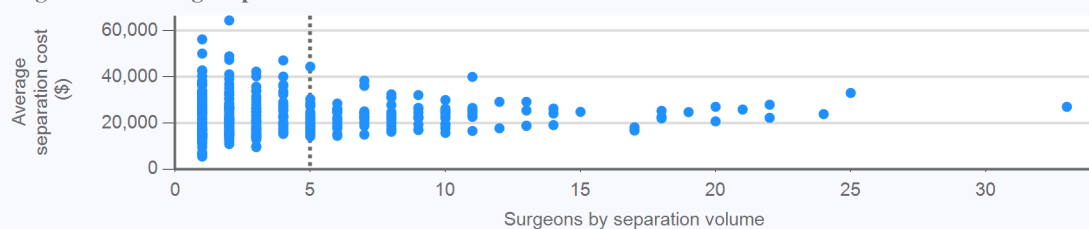
Of the 115 surgeons who performed five or more procedures, the average number of MBS items billed by a surgeon ranged between 1 and 14 with a median of 3.

Table 38: Top five MBS items billed by the surgeon (principal procedure MBS # 32003)

MBS Item number	Description	Total frequency	Frequency per separation
32003	Large intestine, resection of, with anastomosis, including right hemicolectomy (Anaes.) (Assist.)	1609	1.00
00105	Professional attendance by a specialist in the practice of his or her specialty where the patient is referred to him or her each attendance subsequent to the first in a single course of treatment where that attendance is at consulting rooms, hospital or residential aged care facility	1586	0.99
30393	Laparoscopic division of adhesions in association with another intra-abdominal procedure where the time taken to divide the adhesions exceeds 45 minutes (Anaes.) (Assist.)	480	0.30
30390	Laparoscopy, diagnostic, not being a service associated with any other laparoscopic procedure (Anaes.)	296	0.18
00104	Professional attendance by a specialist in the practice of his or her specialty where the patient is referred to him or her an attendance (other than a second or subsequent attendance in a single course of treatment) where that attendance is at consulting rooms, hospital or nursing home, not being a service to which item 106 applies	236	0.15

What are the reasons for the wide variation in the number of MBS items billed?

Figure 50: Average separation cost



----Surgeons with 5 or more separations (1 low volume (less than five separations) outlier(s) not shown on chart)

The separation cost includes the total charges for the hospital separation, including payments made by Medibank, Medicare and the patient. Costs include hospital, prostheses, medical practitioners and diagnostic services. The average total cost per hospital separation was \$23,274.

For the 115 surgeons who performed at least five procedures, the average separation cost of a surgeon ranged between \$14,129 and \$44,272 with a median of \$22,629.

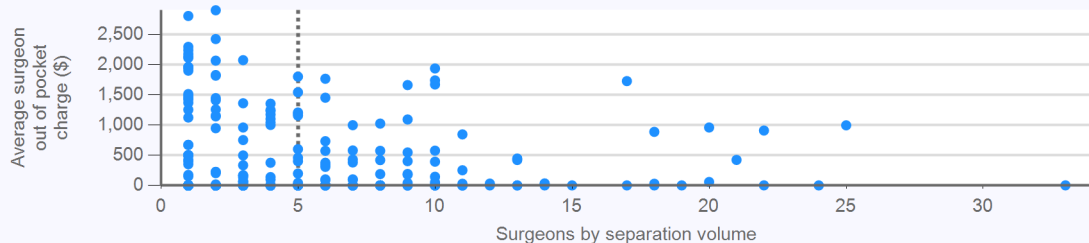
Table 39: Average separation cost by state/territory

State/territory	ACT	NSW	NT	QLD	SA	TAS	VIC	WA
Average separation cost	\$20,387	\$21,188	\$17,850	\$22,730	\$21,642	\$23,051	\$26,003	\$21,118

Are you aware of the associated costs for this procedure such as pathology, diagnostic imaging, surgical assistants, anaesthetists, hospital bed fees?

What are the reasons for variation in separation costs?

Figure 51: Average surgeon out of pocket charge



----Surgeons with 5 or more separations (4 low volume (less than five separations) outlier(s) not shown on chart)

Patients were charged an out of pocket fee by the principal surgeon in 27% of separations and the average out of pocket charged was \$1,211. This only includes out of pocket charges that were identified on the medical claim submitted to Medibank.

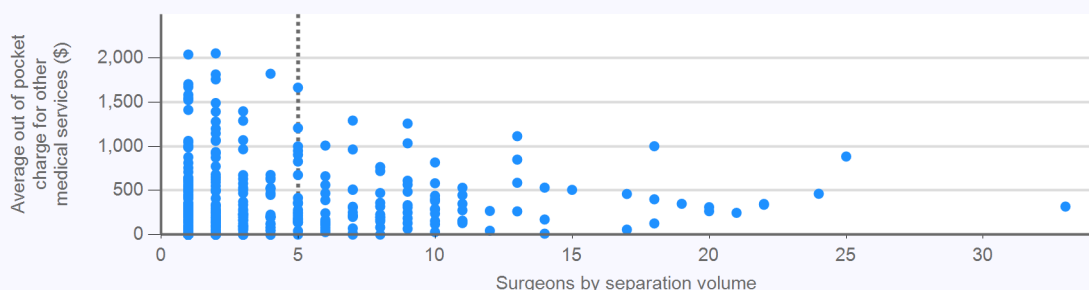
For the 115 surgeons who performed at least five procedures, 53 (46%) did not charge any of their patients an out of pocket for the hospital admission. The average out of pocket charged by these surgeons ranged from \$0 (no out of pocket charged) to \$1,935 with a median of \$27.

Table 40: Surgeon out of pocket charges by state/territory

State/territory	ACT	NSW	NT	QLD	SA	TAS	VIC	WA
% of separations with OOP	5%	38%	25%	32%	5%	61%	17%	31%
Average OOP charged	\$1,511	\$1,865	\$973	\$1,170	\$262	\$715	\$897	\$671

Why is there such variation in the average out of pocket charge?

Figure 52: Average out of pocket charge for other medical services



----Surgeons with 5 or more separations (1 low volume (less than five separations) outlier(s) not shown on chart)

Patients were charged an out of pocket fee for other medical services (including charges raised by the anaesthetist, assistant surgeon and for diagnostics) in 68% of the hospital separations and the average charge was \$550. This only includes out of pocket charges that were identified on the medical claim submitted to Medibank.

For the 115 surgeons who performed at least five procedures, the average out of pocket charges received by their patients for other medical services ranged between \$0 and \$1,664 with a median of \$286.

Table 41: Out of pocket charges for other medical services by state/territory

State/territory	ACT	NSW	NT	QLD	SA	TAS	VIC	WA
% of separations with OOP	60%	55%	88%	71%	43%	38%	76%	86%
Average OOP charged	\$780	\$690	\$591	\$502	\$229	\$335	\$506	\$793

Why is there such variation in the average out of pocket charge?

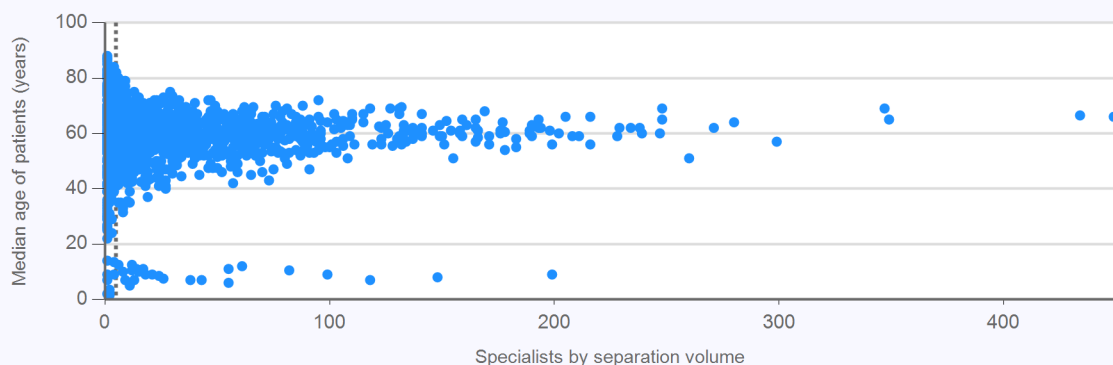
Gastroscopy

In financial years 2015 and 2016 Medibank funded 49,230 operations in private hospitals where gastroscopy was recorded as the principal procedure (highest value MBS fee from the medical claim) for the hospital admission. The analysis is limited to those 49,230 procedures. 1,398 specialists (identified through the stem of their Medicare provider number) billed Medibank for those procedures. 1,048 (75%) of these specialists billed Medibank for five or more procedures during financial years 2015 and 2016. Specialist-level analysis of the indicators considered for this procedure has been limited to those specialists with five or more patient separations, so that each specialist has a sufficient sample of separations from which a value (e.g. an average, median or percentage) for an indicator can be reported.

Table 42: MBS Codes

Procedure	MBS Codes	Volume of Separations	Percentage of Separations	Definition
Gastroscopy	30473	49,230	100%	Oesophagoscopy (not being a service to which item 41816 or 41822 applies), gastroscopy, duodenoscopy or panendoscopy (1 or more such procedures), with or without biopsy, not being a service associated with a service to which item 30476 or 30478 applies (Anaes.)

Figure 53: Median age of patients



Source: Medibank administrative claims data

----Specialists with 5 or more separations

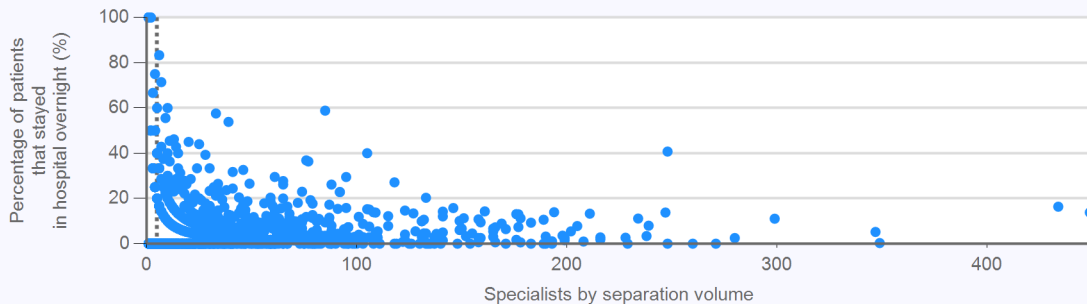
Across all the separations the median patient age was 60 years.

For the 1,048 specialists who performed at least five procedures:

- The median age of a specialist's patients ranged from 5 years to 82 years.

Is this variation in age clinically expected?

Figure 54: Percentage of patients that stayed in hospital overnight



Source: Medibank administrative claims data

---Specialists with 5 or more separations

In 6% of the hospital separations the patient stayed in hospital for at least one night.

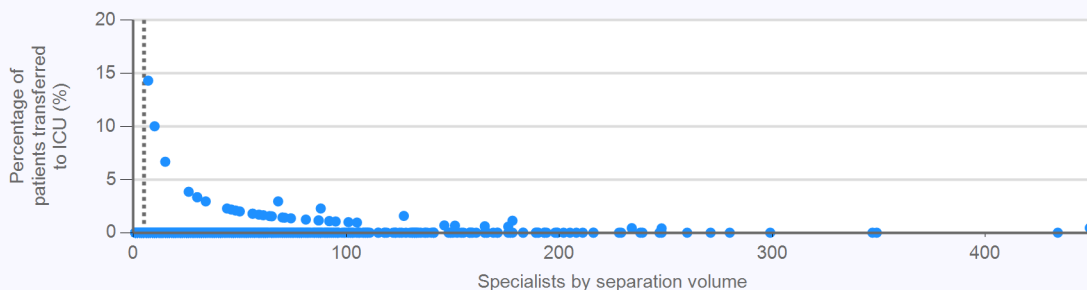
For the 1,048 specialists who performed at least five procedures:

- 0 (0%) had all of their patients stay in hospital overnight
- 465 (44%) had all of their patients discharged on the day of admission
- 583 (56%) had a mix of patients that either stayed in hospital overnight or were admitted and discharged on the same day
- The percentage of a specialist’s patients that stayed in hospital overnight ranged between 0% and 83% with a median of 2%.

What are the reasons for a patient staying in hospital overnight following this procedure?

Why is there variation in the rate of patients that stay in hospital overnight between specialists?

Figure 55: Percentage of patients transferred to ICU



Source: Medibank administrative claims data

---Specialists with 5 or more separations

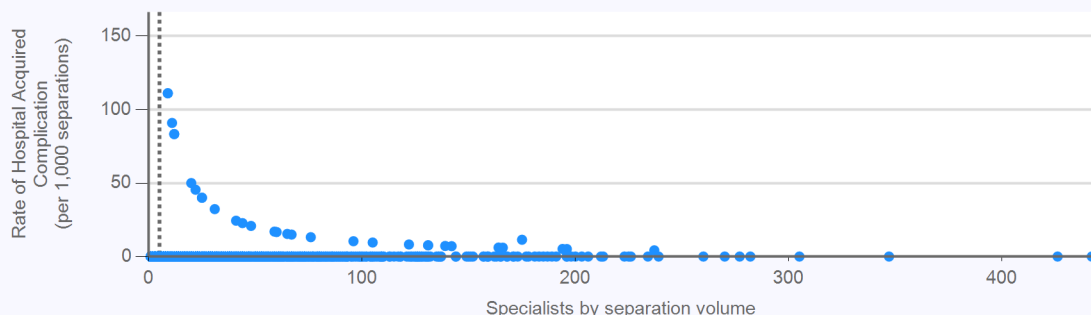
Patients were transferred to an intensive care unit (ICU) in 0.1% of overall hospital separations. Administrative claims data does not indicate whether the transfers were planned or unplanned. For 12 (30%) of these ICU transfers, the patient was in ICU for one day or less.

For the 1,048 specialists who performed at least five procedures:

- 39 (4%) specialists had one or more patient separations during which patients were transferred to ICU
- The percentage of a specialist’s patients that were transferred to ICU ranged between 0% and 14% with a median of 0%.

Given that ICU transfers could indicate a difficult post-operative recovery, what would be the expected transfer rate?

Figure 56: Rate of Hospital Acquired Complications (per 1,000 separations)



----Specialists with 5 or more separations

Hospital Acquired Complications are a Medibank subset of 82 International Classification of Diseases (ICD) codes drawn from the Australian Commission of Safety and Quality in Health Care’s list of hospital acquired complications (see Table 64). The rate of Hospital Acquired Complications was 1 per 1,000 separations. Separations for which Medibank did not have a matching HCP record have been excluded from the analysis (as there was insufficient information to identify whether a Hospital Acquired Complication did or did not occur).

For the 1,031 specialists who performed at least five procedures:

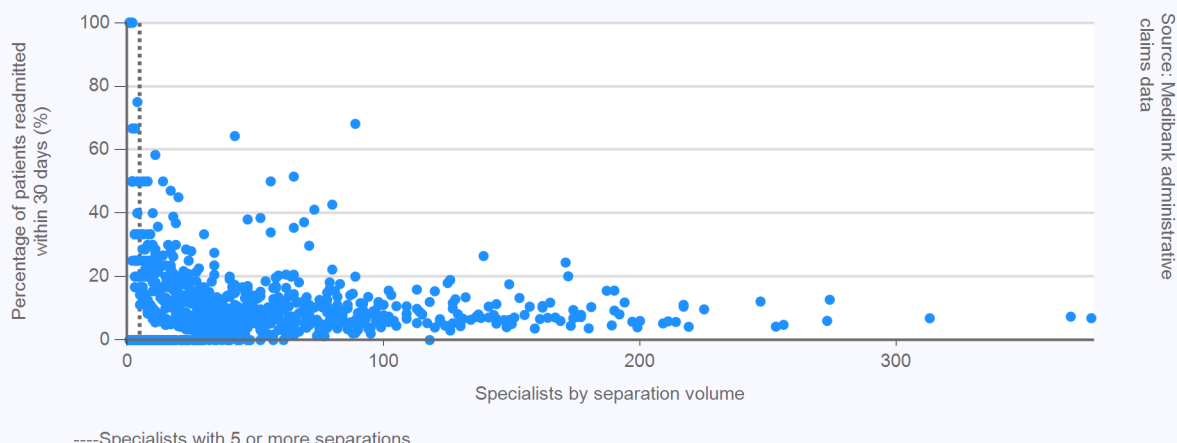
- 31 (3%) specialists had one or more separations during which a Hospital Acquired Complication was identified
- The rate of Hospital Acquired Complications for a specialist ranged between 0 per 1,000 separations to 111 per 1,000 separations with a median of 0 per 1,000 separations.

Table 43: Hospital Acquired Complications identified during the hospital separation

Description	Number recorded
Other surgical complications	7
Post-operative haemorrhage and haematoma	10
Prosthesis associated infection	11
Surgical site infection	1

What complications have you had for this procedure?

Figure 57: Percentage of patients readmitted within 30 days



Following 4,512 (10%) hospital separations, patients were readmitted (for all causes)* to a hospital within 30 days. Administrative claims data does not indicate whether the readmissions were planned or unplanned. The median age of patients readmitted was 60 years, compared with a median age of 58 years for patients not readmitted. Of the 4,512 readmissions:

- 4,048 readmissions were to a private hospital (the same one or a different hospital). In 34 of these separations at least one Hospital Acquired Complication was identified (see Table 44)
- 464 readmissions were to a public hospital (where the patient was treated as a private patient).

For the 1,015 specialists who performed at least five procedures (on patients less than 80 years old), the percentage of a specialist's patients readmitted within 30 days ranged between 0% and 70% with a median of 8%. Readmissions to public hospitals, where patients were treated as public patients, are not captured in these datasets.

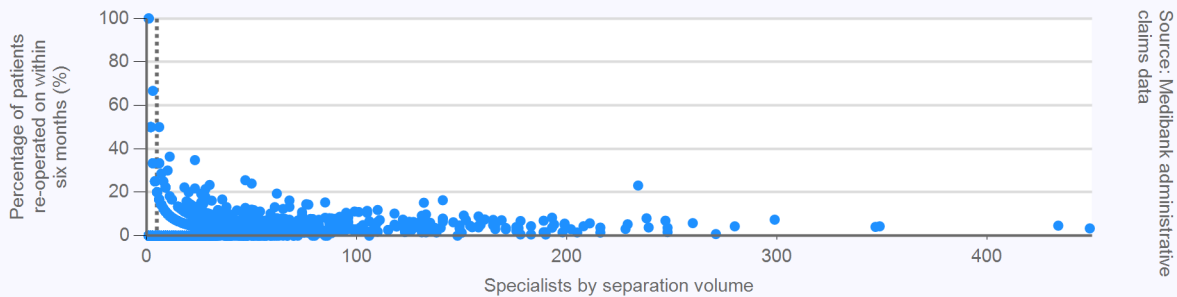
*This analysis excludes any separations where the patient was 80 years or older. Readmissions for rehabilitation, psychiatric treatment, dialysis and chemotherapy were excluded where identified.

Table 44: Hospital Acquired Complications identified on readmission

Description	Number recorded
Blood stream infection	1
Other surgical complications	9
Post-operative haemorrhage and haematoma	9
Prosthesis associated infection	7
Surgical site infection	8

What are the reasons for readmission for this procedure, and what is the expected rate?

Figure 58: Percentage of patients re-operated on within six months



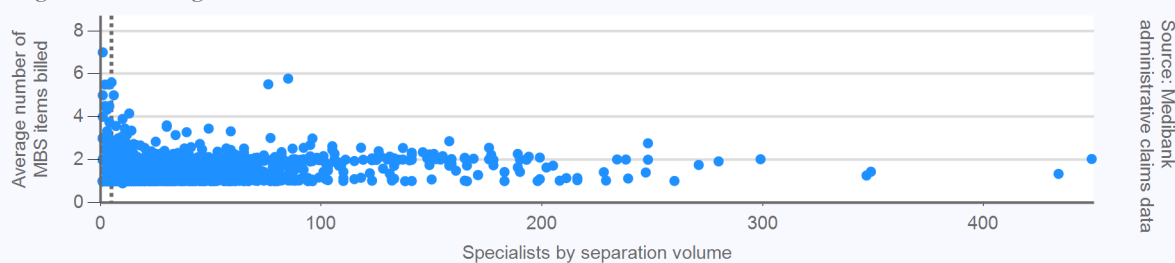
----Specialists with 5 or more separations

Patients were re-operated on (same procedure) within six months of discharge from hospital, in 2,198 (4%) hospital separations. There was no difference in the median age of patients re-operated on, compared with those that were not.

Of the 1,048 specialists who performed five or more procedures:

- 629 (60%) had one or more patients that were re-operated on within six months
- The percentage of a specialist’s patients re-operated on within six months ranged between 0% and 50% with a median of 3%.

What are the reasons for re-operation for this procedure, and what is the expected rate?

Figure 59: Average number of MBS items billed

---Specialists with 5 or more separations (1 low volume (less than five separations) outlier(s) not shown on chart)

The average number of MBS items billed by a specialist (the principal specialist only) was 1.6 per hospital separation.

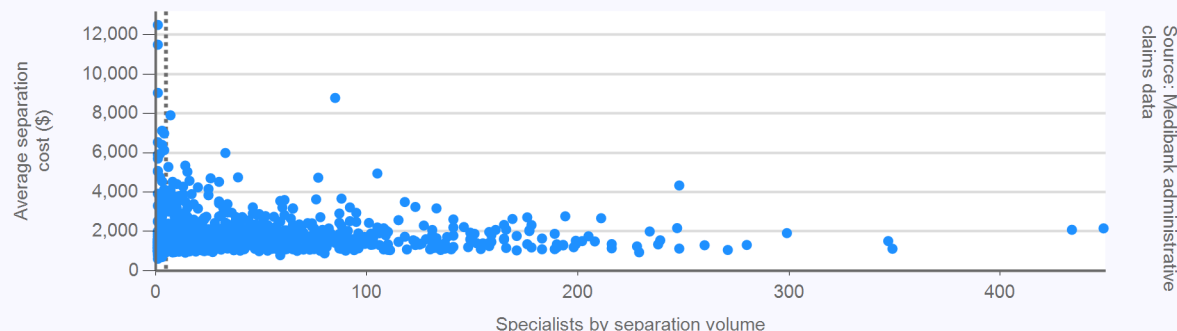
Of the 1,048 surgeons who performed five or more procedures, the average number of MBS items billed by a surgeon ranged between 0.9 and 5.8 with a median of 1.5.

Table 45: Top five MBS items billed by the specialist (principal procedure MBS # 30473)

MBS Item number	Description	Total frequency	Frequency per separation
30473	Oesophagoscopy (not being a service to which item 41816 or 41822 applies), gastroscopy, duodenoscopy or panendoscopy (1 or more such procedures), with or without biopsy, not being a service associated with a service to which item 30476 or 30478 applies (Anaes.)	49249	1.00
00116	Professional attendance at consulting rooms or hospital, by a consultant physician in the practice of his or her specialty (other than psychiatry) following referral of the patient to him or her by a medical practitioner — each attendance (not being a service to which item 119 applies) subsequent to the first in a single course of treatment	12763	0.26
00110	Professional attendance at consulting rooms or hospital, by a consultant physician in the practice of his or her specialty (other than psychiatry) following referral of the patient to him or her by a referring practitioner - initial attendance in a single course of treatment	8499	0.17
00105	Professional attendance by a specialist in the practice of his or her specialty where the patient is referred to him or her each attendance subsequent to the first in a single course of treatment where that attendance is at consulting rooms, hospital or residential aged care facility	3447	0.07
00119	Professional attendance at consulting rooms or hospital by a consultant physician in the practice of his or her specialty (other than psychiatry) where the patient is referred to him or her by a medical practitioner each minor attendance subsequent to the first in a single course of treatment	2312	0.05

What are the reasons for the wide variation in the number of MBS items billed?

Figure 60: Average separation cost



---Specialists with 5 or more separations (3 low volume (less than five separations) outlier(s) not shown on chart)

The separation cost includes the total charges for the hospital separation, including payments made by Medibank, Medicare and the patient. Costs include hospital, prostheses, medical practitioners and diagnostic services. The average total cost per hospital separation was \$1,695.

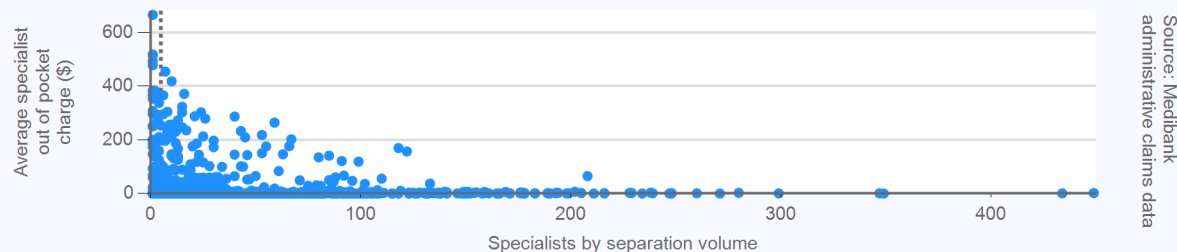
For the 1,048 specialists who performed at least five procedures, the average separation cost of a surgeon ranged between \$791 and \$8,784 with a median of \$1,445.

Table 46: Average separation cost by state/territory

State/territory	ACT	NSW	NT	QLD	SA	TAS	VIC	WA
Average separation cost	\$1,478	\$1,481	\$1,487	\$1,856	\$1,413	\$1,730	\$1,685	\$1,866

Are you aware of the associated costs for this procedure such as pathology, diagnostic imaging, surgical assistants, anaesthetists, hospital bed fees? What are the reasons for variation in separation costs?

Figure 61: Average specialist out of pocket charge



---Specialists with 5 or more separations

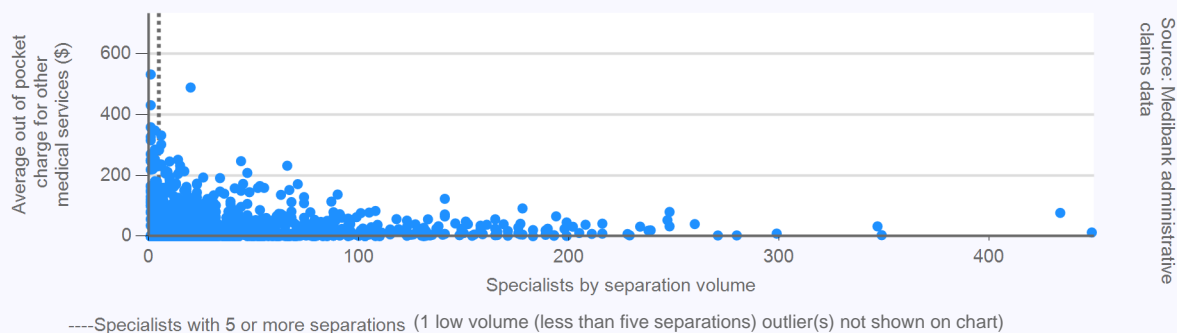
Patients were charged an out of pocket fee by the principal specialist in 7% of separations and the average out of pocket charged was \$169. This only includes out of pocket charges that were identified on the medical claim submitted to Medibank.

For the 1,048 specialists who performed at least five procedures, 606 (58%) did not charge any of their patients an out of pocket for the hospital admission. The average out of pocket charged by these specialists ranged from \$0 (no out of pocket charged) to \$454 with a median of \$0.

Table 47: Specialist out of pocket charges by state/territory

State/territory	ACT	NSW	NT	QLD	SA	TAS	VIC	WA
% of separations with OOP	54%	14%	20%	5%	1%	2%	3%	4%
Average OOP charged	\$194	\$179	\$349	\$167	\$123	\$92	\$118	\$172

Why is there such variation in the average out of pocket charge?

Figure 62: Average out of pocket charge for other medical services

Patients were charged an out of pocket fee for other medical services (including charges raised by the anaesthetist, assistant specialist and for diagnostics) in 18% of the hospital separations and the average charge was \$150. This only includes out of pocket charges that were identified on the medical claim submitted to Medibank.

For the 1,048 specialists who performed at least five procedures, the average out of pocket charges received by their patients for other medical services ranged between \$0 and \$489 with a median of \$12.

Table 48: Out of pocket charges for other medical services by state/territory

State/territory	ACT	NSW	NT	QLD	SA	TAS	VIC	WA
% of separations with OOP	3%	15%	47%	18%	5%	4%	21%	29%
Average OOP	195	133	172	154	117	162	150	166

Why is there such variation in the average out of pocket charge?

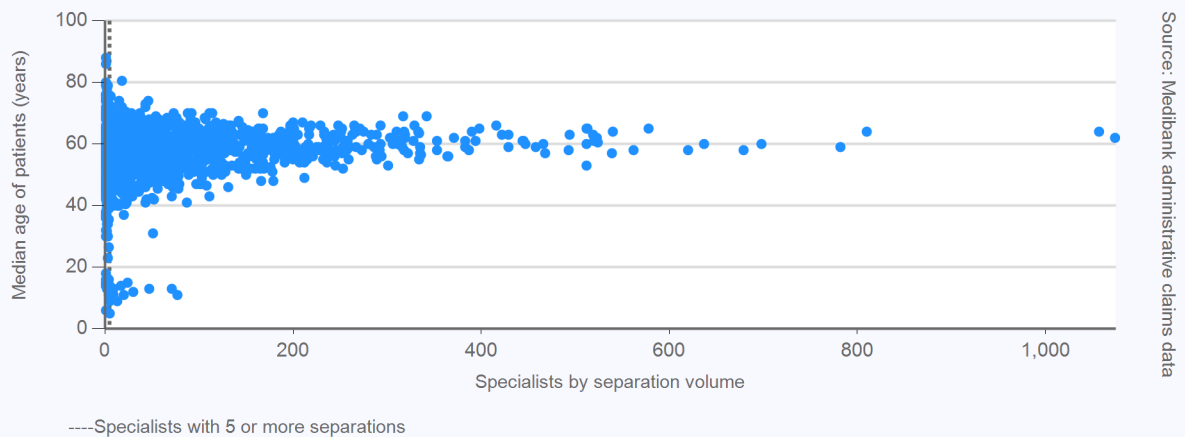
Colonoscopy

In financial years 2015 and 2016 Medibank funded 114,695 operations in private hospitals where colonoscopy was recorded as the principal procedure (highest value MBS fee from the medical claim) for the hospital admission. The analysis is limited to those 114,695 procedures. 1,474 specialists (identified through the stem of their Medicare provider number) billed Medibank for those procedures. 1,270 (86%) of these specialists billed Medibank for five or more procedures during financial years 2015 and 2016. Specialist-level analysis of the indicators considered for this procedure has been limited to those specialists with five or more patient separations, so that each specialist has a sufficient sample of separations from which a value (e.g. an average, median or percentage) for an indicator can be reported.

Table 49: MBS Codes

Procedure	MBS Codes	Volume of Separations	Percentage of Separations	Definition
Colonoscopy	32090	114,695	100%	Fibreoptic colonoscopy examination of colon beyond the hepatic flexure with or without biopsy (Anaes.)

Figure 63: Median age of patients



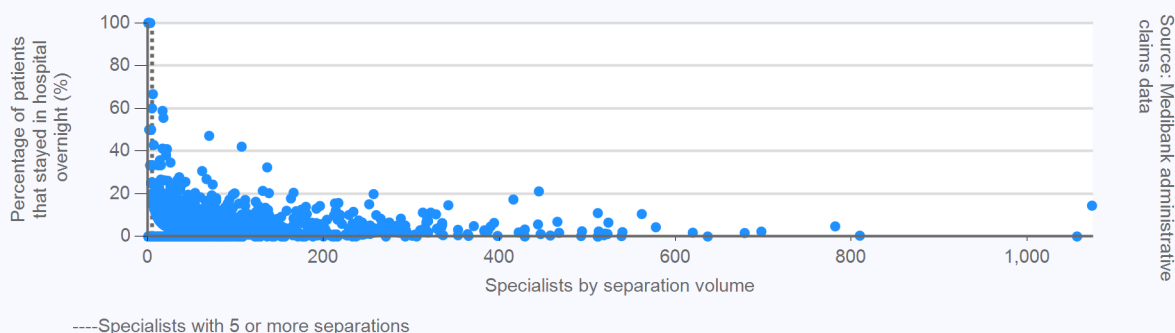
Across all the separations the median patient age was 60 years.

For the 1,270 specialists who performed at least five procedures:

- The median age of a specialist's patients ranged from 5 years to 81 years.

Is this variation in age clinically expected?

Figure 64: Percentage of patients that stayed in hospital overnight



In 5% of the hospital separations the patient stayed in hospital for at least one night.

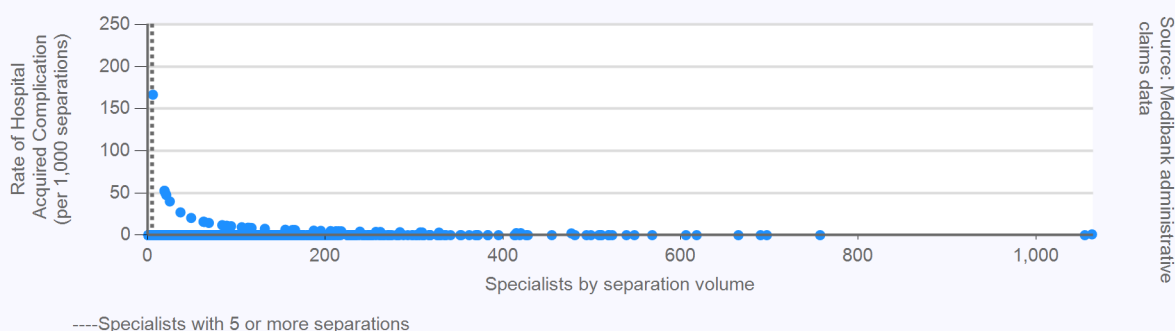
For the 1,270 specialists who performed at least five procedures:

- 401 (32%) had all of their patients discharged on the same day of admission
- 869 (68%) had a mix of patients that either stayed in hospital overnight or were admitted and discharged on the same day
- The percentage of a specialist’s patients that stayed in hospital overnight ranged between 0% and 67% with a median of 3%.

What are the reasons for a patient staying in hospital overnight following this procedure?

Why is there variation in the rate of patients that stay in hospital overnight between specialists?

Figure 65: Rate of Hospital Acquired Complications (per 1,000 separations)



Hospital Acquired Complications are a Medibank subset of 82 International Classification of Diseases (ICD) codes drawn from the Australian Commission of Safety and Quality in Health Care’s list of hospital acquired complications (see Table 64).

The rate of Hospital Acquired Complications was 0 per 1,000 separations. Separations for which Medibank did not have a matching HCP record have been excluded from the analysis (as there was insufficient information to identify whether a Hospital Acquired Complication did or did not occur).

For the 1,252 specialists who performed at least five procedures:

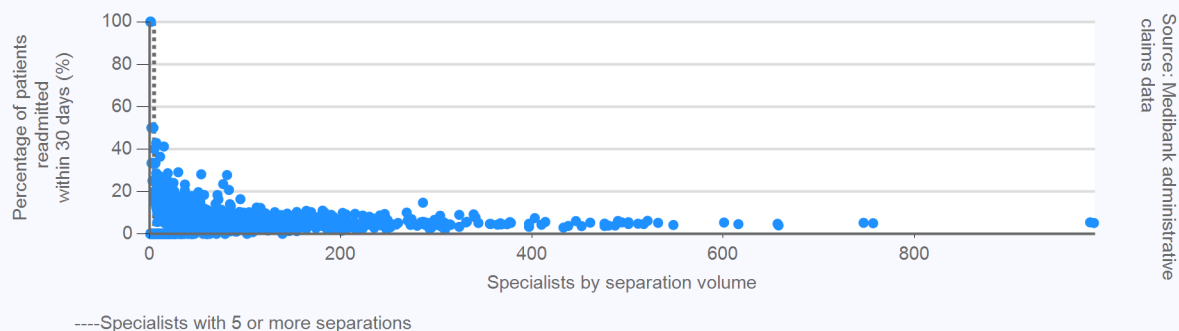
- 41 (3%) specialists had one or more separations during which a Hospital Acquired Complication was identified
- The rate of Hospital Acquired Complications for a specialist ranged between 0 per 1,000 separations to 167 per 1,000 separations with a median of 0 per 1,000 separations.

Table 50: Hospital Acquired Complications identified during the hospital separation

Description	Number recorded
Blood stream infection	2
Other surgical complications	21
Post-operative haemorrhage and haematoma	6
Prosthesis associated infection	11

What complications have you had for this procedure?

Figure 66: Percentage of patients readmitted within 30 days



Following 6,425 (6%) hospital separations, patients were readmitted (for all causes)* to a hospital within 30 days. Administrative claims data does not indicate whether the readmissions were planned or unplanned. The median age of patients readmitted was 62 years, compared with a median age of 59 years for patients not readmitted. Of the 6,425 readmissions:

- 5,709 readmissions were to a private hospital (the same one or a different hospital). In 74 of these separations at least one Hospital Acquired Complication was identified (see Table 51)
- 716 readmissions were to a public hospital (where the patient was treated as a private patient).

For the 1,264 specialists who performed at least five procedures (on patients less than 80 years old), the percentage of a specialist's patients readmitted within 30 days ranged between 0% and 47% with a median of 5%.

Readmissions to public hospitals, where patients were treated as public patients, are not captured in these datasets.

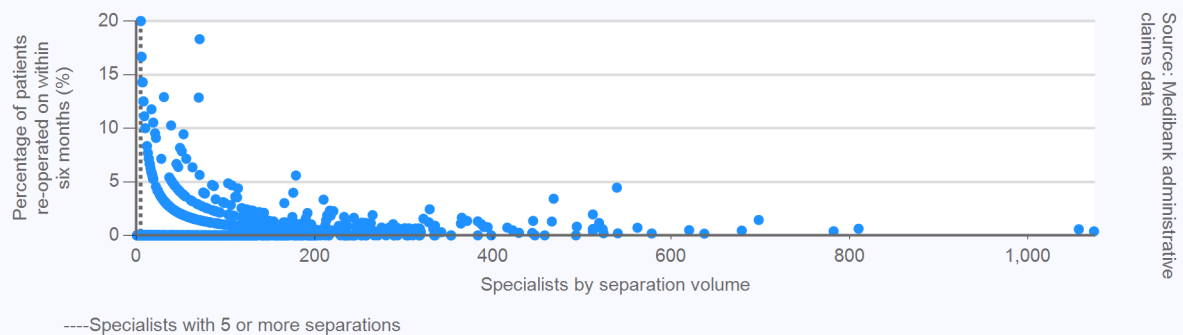
*This analysis excludes any separations where the patient was 80 years or older. Readmissions for rehabilitation, psychiatric treatment, dialysis and chemotherapy were excluded where identified.

Table 51: Hospital Acquired Complications identified on readmission

Description	Number recorded
Blood stream infection	2
Other surgical complications	32
Post-operative haemorrhage and haematoma	10
Prosthesis associated infection	10
Surgical site infection	20

What are the reasons for readmission for this procedure, and what is the expected rate?

Figure 67: Percentage of patients re-operated on within six months



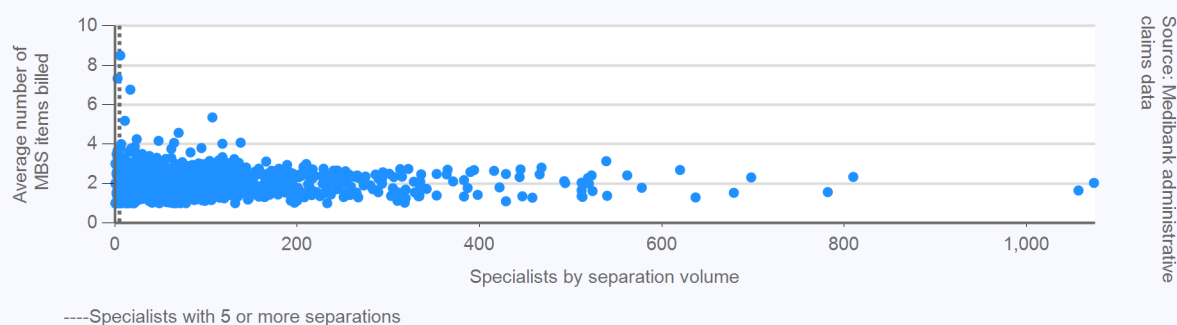
Patients were re-operated on (same procedure) within six months of discharge from hospital, in 832 (1%) hospital separations. There was no difference in the median age of patients re-operated on, compared with those that were not.

Of the 1,270 specialists who performed five or more procedures:

- 413 (33%) had one or more patients that were re-operated on within six months
- The percentage of a specialist's patients re-operated on within six months ranged between 0% and 20% with a median of 0%.

What are the reasons for re-operation for this procedure, and what is the expected rate?

Figure 68: Average number of MBS items billed



The average number of MBS items billed by a specialist (the principal specialist only) was 2 per hospital separation.

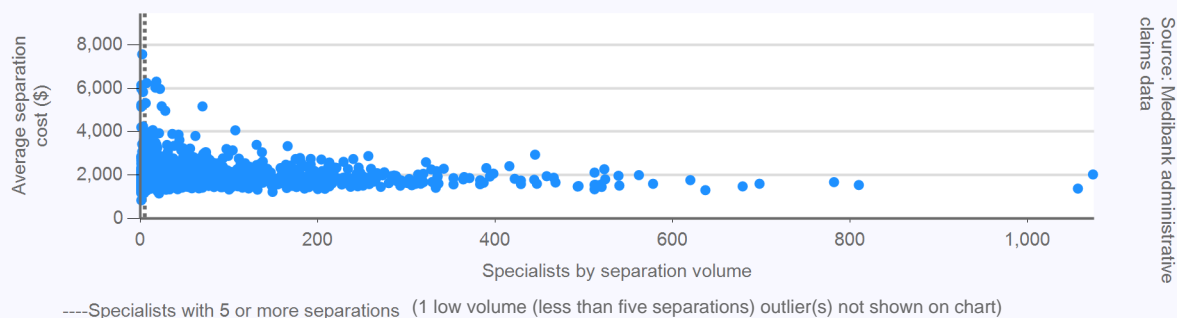
Of the 1,270 surgeons who performed five or more procedures, the average number of MBS items billed by a surgeon ranged between 1 and 8.5 with a median of 1.9.

Table 52: Top five MBS items billed by the specialist (principal procedure MBS # 32090)

MBS Item number	Description	Total frequency	Frequency per separation
32090	Fibroptic colonoscopy examination of colon beyond the hepatic flexure with or without biopsy (Anaes.)	114703	1.00
30473	Oesophagoscopy (not being a service to which item 41816 or 41822 applies), gastroscopy, duodenoscopy or panendoscopy (1 or more such procedures), with or without biopsy, not being a service associated with a service to which item 30476 or 30478 applies (Anaes.)	43838	0.38
00116	Professional attendance at consulting rooms or hospital, by a consultant physician in the practice of his or her specialty (other than psychiatry) following referral of the patient to him or her by a medical practitioner — each attendance (not being a service to which item 119 applies) subsequent to the first in a single course of treatment	18380	0.16
00110	Professional attendance at consulting rooms or hospital, by a consultant physician in the practice of his or her specialty (other than psychiatry) following referral of the patient to him or her by a referring practitioner - initial attendance in a single course of treatment	15979	0.14
00105	Professional attendance by a specialist in the practice of his or her specialty where the patient is referred to him or her each attendance subsequent to the first in a single course of treatment where that attendance is at consulting rooms, hospital or residential aged care facility	10553	0.09

What are the reasons for the wide variation in the number of MBS items billed?

Figure 69: Average separation cost



The separation cost includes the total charges for the hospital separation, including payments made by Medibank, Medicare and the patient. Costs include hospital, prostheses, medical practitioners and diagnostic services. The average total cost per hospital separation was \$1,887.

For the 1,270 specialists who performed at least five procedures, the average separation cost of a specialist ranged between \$1,153 and \$6,308 with a median of \$1,846.

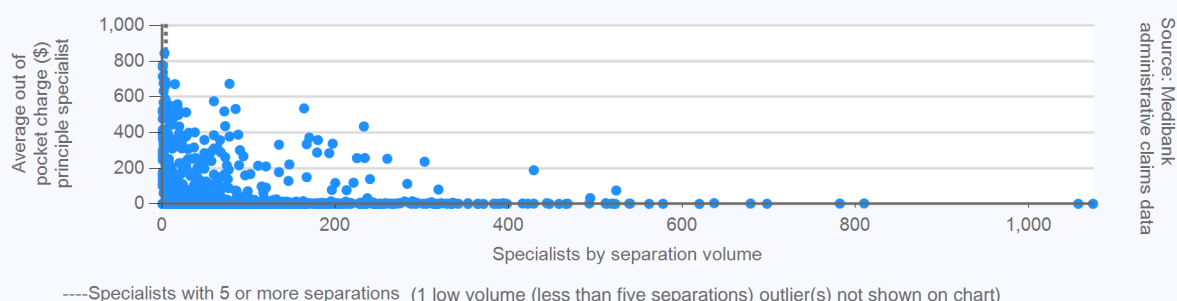
Table 53: Average separation cost by state/territory

State/territory	ACT	NSW	NT	QLD	SA	TAS	VIC	WA
Average separation cost	\$1,803	\$1,906	\$1,857	\$1,986	\$1,688	\$1,776	\$1,847	\$1,898

Are you aware of the associated costs for this procedure such as pathology, diagnostic imaging, surgical assistants, anaesthetists, hospital bed fees?

What are the reasons for variation in separation costs?

Figure 70: Average principal specialist out of pocket charge



Patients were charged an out of pocket fee by the principal specialist in 9% of separations and the average out of pocket charged was \$272. This only includes out of pocket charges that were identified on the medical claim submitted to Medibank.

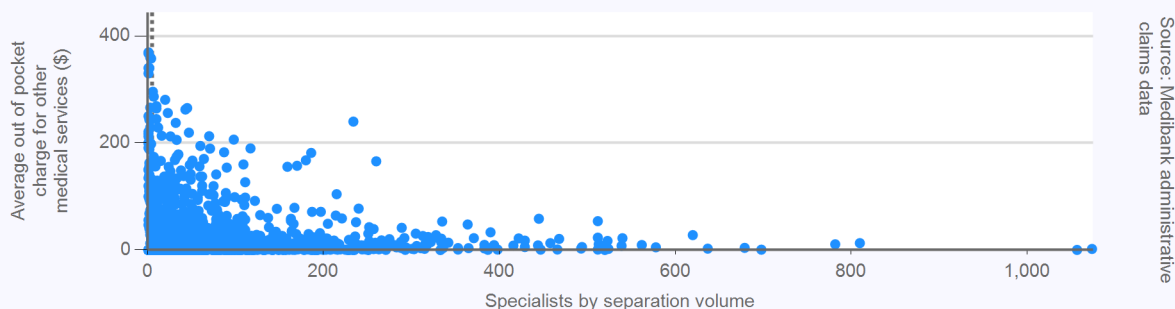
For the 1,270 specialists who performed at least five procedures, 535 (42%) did not charge any of their patients an out of pocket for the hospital admission. The average out of pocket charged by these specialists ranged from \$0 (no out of pocket charged) to \$673 with a median of \$1.

Table 54: Specialist out of pocket charges by state/territory

State/territory	ACT	NSW	NT	QLD	SA	TAS	VIC	WA
% of separations with OOP	65%	16%	26%	8%	3%	2%	5%	4%
Average OOP charged	\$350	\$309	\$579	\$250	\$143	\$97	\$165	\$123

Why is there such variation in the average out of pocket charge?

Figure 71: Average out of pocket charge for other medical services



---Specialists with 5 or more separations (1 low volume (less than five separations) outlier(s) not shown on chart)

Patients were charged an out of pocket fee for other medical services (including charges raised by the anaesthetist, assistant specialist and for diagnostics) in 13% of the hospital separations and the average charge was \$148. This only includes out of pocket charges that were identified on the medical claim submitted to Medibank.

For the 1,270 specialists who performed at least five procedures, the average out of pocket charges received by their patients for other medical services ranged between \$0 and \$296 with a median of \$9.

Table 55: Out of pocket charges for other medical services by state/territory

State/territory	ACT	NSW	NT	QLD	SA	TAS	VIC	WA
% of separations with OOP	5%	14%	55%	14%	3%	2%	14%	18%
Average OOP charged	\$222	\$154	\$164	\$166	\$103	\$139	\$129	\$154

Why is there such variation in the average out of pocket charge?

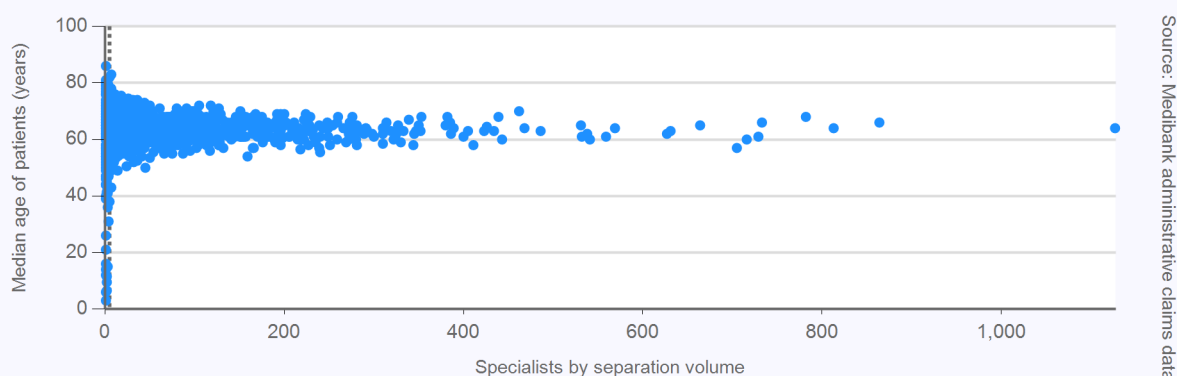
Colonoscopy (with polyp removal)

In financial years 2015 and 2016 Medibank funded 96,137 operations in private hospitals where colonoscopy (with polyp removal) was recorded as the principal procedure (highest value MBS fee from the medical claim) for the hospital admission. The analysis is limited to those 96,137 procedures. 1,394 specialists (identified through the stem of their Medicare provider number) billed Medibank for those procedures. 1,152 (83%) of these specialists billed Medibank for five or more procedures during financial years 2015 and 2016. Specialists-level analysis of the indicators considered for this procedure has been limited to those specialists with five or more patient separations, so that each specialists has a sufficient sample of separations from which a value (e.g. an average, median or percentage) for an indicator can be reported.

Table 56: MBS Codes

Procedure	MBS Codes	Volume of Separations	Percentage of Separations	Definition
Colonoscopy (with polyp removal)	32093	96,137	100%	Fibreoptic colonoscopy examination of colon beyond the hepatic flexure with removal of 1 or more polyps (Anaes.)

Figure 72: Median age of patients



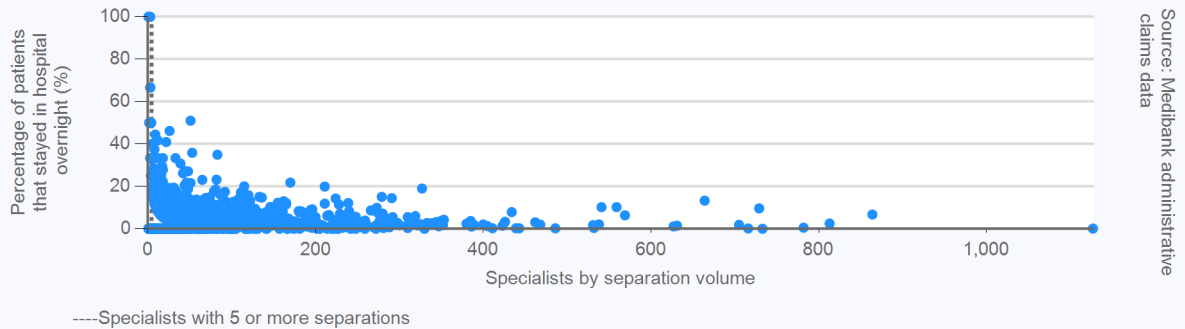
Across all the separations the median patient age was 64 years.

For the 1,152 specialists who performed at least five procedures:

- The median age of a specialist's patients ranged from 38 years to 83 years.

Is this variation in age clinically expected?

Figure 73: Percentage of patients that stayed in hospital overnight



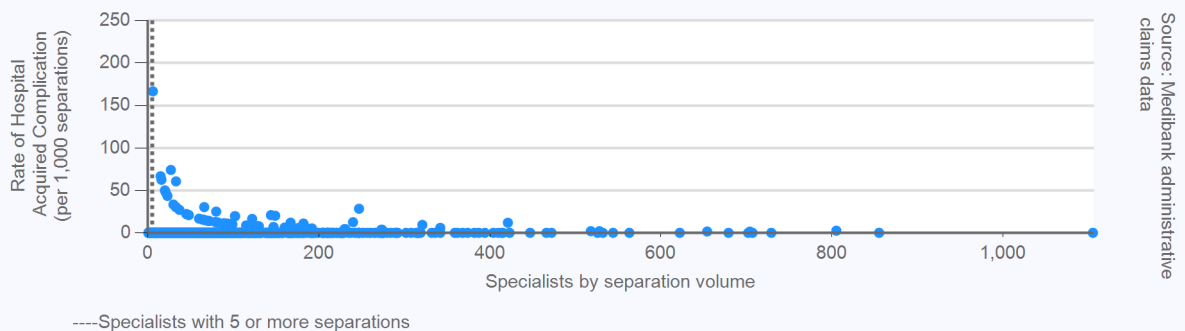
In 4% of the hospital separations the patient stayed in hospital for at least one night.

For the 1,152 specialists who performed at least five procedures:

- 385 (33%) had all of their patients discharged on the day of admission
- 767 (67%) had a mix of patients that either stayed in hospital overnight or were admitted and discharged on the same day
- The percentage of a specialist’s patients that stayed in hospital overnight ranged between 0% and 51% with a median of 3%.

*What are the reasons for a patient staying in hospital overnight following this procedure?
Why is there variation in the rate of patients that stay in hospital overnight between specialists?*

Figure 74: Rate of Hospital Acquired Complications (per 1,000 separations)



Hospital Acquired Complications are a Medibank subset of 82 International Classification of Diseases (ICD) codes drawn from the Australian Commission of Safety and Quality in Health Care’s list of hospital acquired complications (see Table 64). The rate of Hospital Acquired Complications was 1 per 1,000 separations. Separations for which Medibank did not have a matching HCP record have been excluded from the analysis (as there was insufficient information to identify whether a Hospital Acquired Complication did or did not occur).

For the 1,134 specialists who performed at least five procedures:

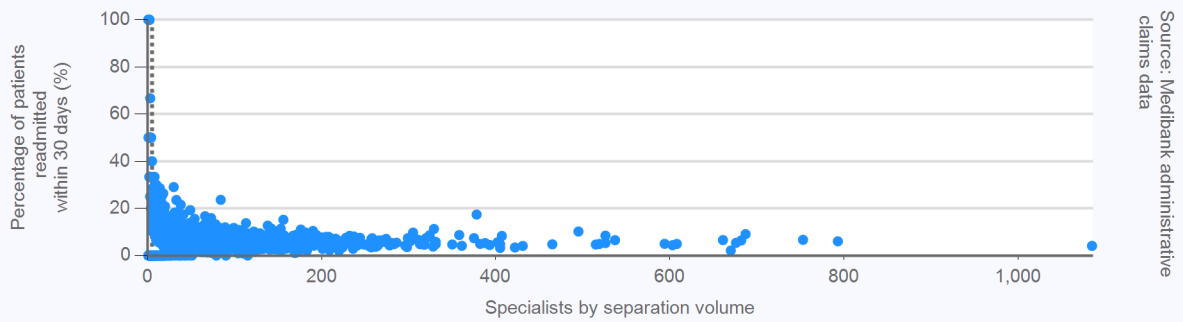
- 68 (6%) specialists had one or more separations during which a Hospital Acquired Complication was identified
- The rate of Hospital Acquired Complications for a specialist ranged between 0 per 1,000 separations to 167 per 1,000 separations with a median of 0 per 1,000 separations.

Table 57: Hospital Acquired Complications identified during the hospital separation

Description	Number recorded
Other surgical complications	74
Post-operative haemorrhage and haematoma	20
Prosthesis associated infection	3

What complications have you had for this procedure?

Figure 75: Percentage of patients readmitted within 30 days



----Specialists with 5 or more separations

Following 5,729 (6%) hospital separations, patients were readmitted (for all causes)* to a hospital within 30 days. Administrative claims data does not indicate whether the readmissions were planned or unplanned. The median age of patients readmitted was 66 years, compared with a median age of 63 years for patients not readmitted. Of the 5,729 readmissions:

- 5,049 readmissions were to a private hospital (the same one or a different hospital). In 150 of these separations at least one Hospital Acquired Complication was identified (see Table 58)
- 680 readmissions were to a public hospital (where the patient was treated as a private patient).

For the 1,136 specialists who performed at least five procedures (on patients less than 80 years old), the percentage of a specialist's patients readmitted within 30 days ranged between 0% and 40% with a median of 6%.

Readmissions to public hospitals, where patients were treated as public patients, are not captured in these datasets.

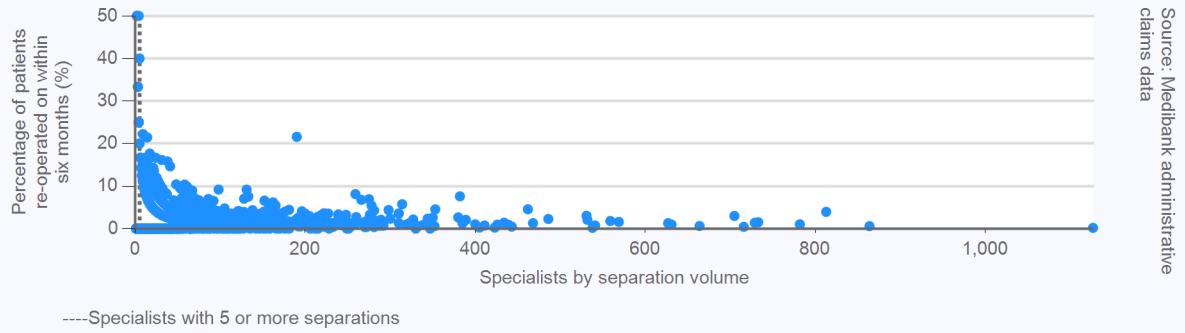
*This analysis excludes any separations where the patient was 80 years or older. Readmissions for rehabilitation, psychiatric treatment, dialysis and chemotherapy were excluded where identified.

Table 58: Hospital Acquired Complications identified on readmission

Description	Number recorded
Blood stream infection	1
Other surgical complications	106
Post-operative haemorrhage and haematoma	12
Prosthesis associated infection	13
Surgical site infection	18

What are the reasons for readmission for this procedure, and what is the expected rate?

Figure 76: Percentage of patients re-operated on within six months



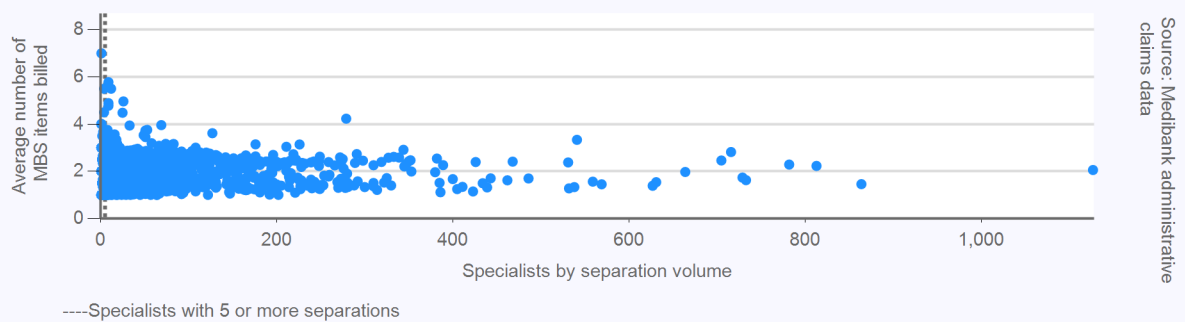
Patients were re-operated on (same procedure) within six months of discharge from hospital, in 1,884 (2%) hospital separations. There was no difference in the median age of patients re-operated on, compared with those that were not.

Of the 1,152 specialists who performed five or more procedures:

- 638 (55%) had one or more patients that were re-operated on within six months
- The percentage of a specialist's patients re-operated on within six months ranged between 0% and 40% with a median of 1%.

What are the reasons for re-operation for this procedure, and what is the expected rate?

Figure 77: Average number of MBS items billed



The average number of MBS items billed by a specialist (the principal specialist only) was 1.9 per hospital separation.

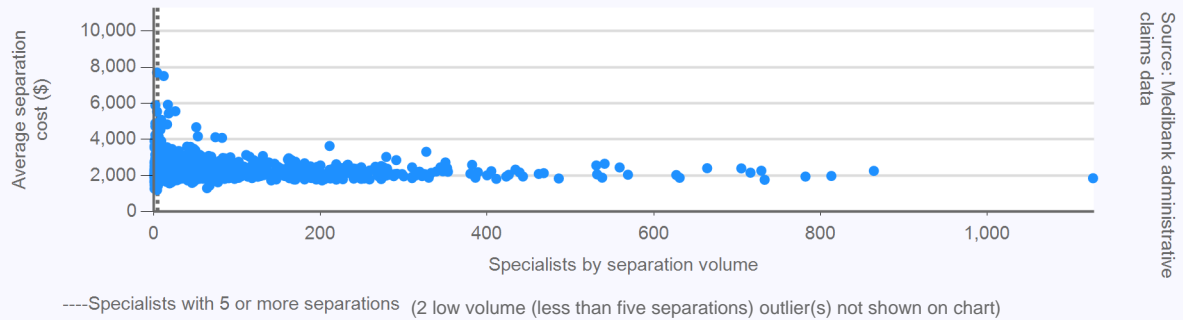
Of the 1,152 surgeons who performed five or more procedures, the average number of MBS items billed by a surgeon ranged between 1 and 5.8 with a median of 1.8.

Table 59: Top five MBS items billed by the specialist (principal procedure MBS # 32093)

MBS Item number	Description	Total frequency	Frequency per separation
32093	Fibroptic colonoscopy examination of colon beyond the hepatic flexure with removal of 1 or more polyps (Anaes.)	96136	1.00
30473	Oesophagoscopy (not being a service to which item 41816 or 41822 applies), gastroscopy, duodenoscopy or panendoscopy (1 or more such procedures), with or without biopsy, not being a service associated with a service to which item 30476 or 30478 applies (Anaes.)	31725	0.33
00116	Professional attendance at consulting rooms or hospital, by a consultant physician in the practice of his or her specialty (other than psychiatry) following referral of the patient to him or her by a medical practitioner — each attendance (not being a service to which item 119 applies) subsequent to the first in a single course of treatment	14568	0.15
00110	Professional attendance at consulting rooms or hospital, by a consultant physician in the practice of his or her specialty (other than psychiatry) following referral of the patient to him or her by a referring practitioner - initial attendance in a single course of treatment	14197	0.15
00105	Professional attendance by a specialist in the practice of his or her specialty where the patient is referred to him or her each attendance subsequent to the first in a single course of treatment where that attendance is at consulting rooms, hospital or residential aged care facility	6772	0.07

What are the reasons for the wide variation in the number of MBS items billed?

Figure 78: Average separation cost



The separation cost includes the total charges for the hospital separation, including payments made by Medibank, Medicare and the patient. Costs include hospital, prostheses, medical practitioners and diagnostic services. The average total cost per hospital separation was \$2,221.

For the 1,152 specialists who performed at least five procedures, the average separation cost of a specialist ranged between \$1,306 and \$7,508 with a median of \$2,187.

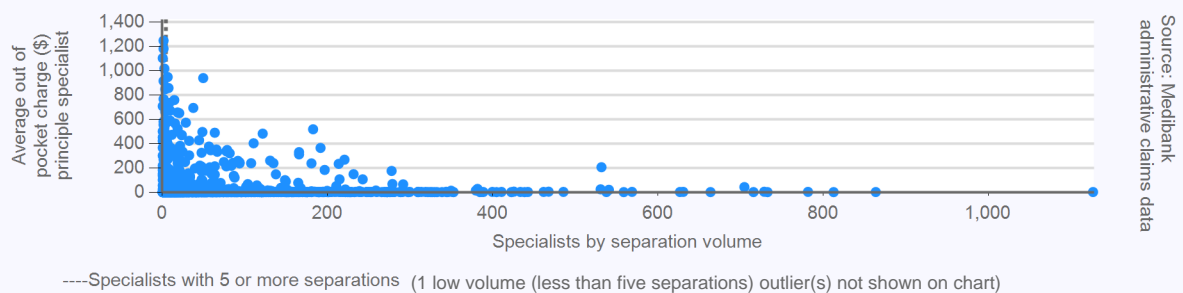
Table 60: Average separation cost by state/territory

State/territory	ACT	NSW	NT	QLD	SA	TAS	VIC	WA
Average separation cost	\$2,212	\$2,277	\$2,185	\$2,244	\$2,070	\$2,281	\$2,206	\$2,113

Are you aware of the associated costs for this procedure such as pathology, diagnostic imaging, surgical assistants, anaesthetists, hospital bed fees?

What are the reasons for variation in separation costs?

Figure 79: Average principal specialist out of pocket charge



Patients were charged an out of pocket fee by the principal specialist in 8% of separations and the average out of pocket charged was \$312. This only includes out of pocket charges that were identified on the medical claim submitted to Medibank.

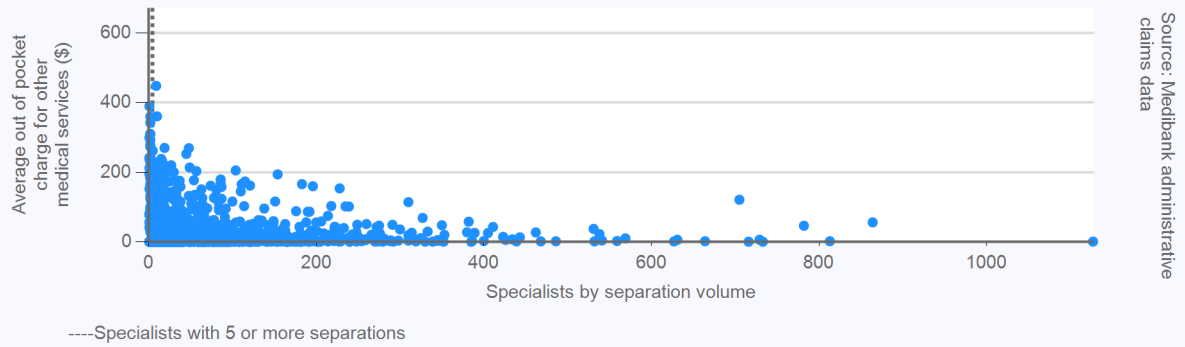
For the 1,152 specialists who performed at least five procedures, 577 (50%) did not charge any of their patients an out of pocket for the hospital admission. The average out of pocket charged by these specialists ranged from \$0 (no out of pocket charged) to \$947 with a median of \$0.

Table 61: Specialist out of pocket charges by state/territory

State/territory	ACT	NSW	NT	QLD	SA	TAS	VIC	WA
% of separations with OOP	58%	12%	35%	6%	2%	2%	3%	2%
Average OOP charged	\$401	\$318	\$790	\$262	\$185	\$185	\$196	\$106

Why is there such variation in the average out of pocket charge?

Figure 80: Average out of pocket charge for other medical services



Patients were charged an out of pocket fee for other medical services (including charges raised by the anaesthetist, assistant specialist and for diagnostics) in 18% of the hospital separations and the average charge was \$134. This does not include any out of pockets charged to the patient that were not identified on the medical claim submitted to Medibank.

For the 1,152 specialists who performed at least five procedures, the average out of pocket charges received by their patients for other medical services ranged between \$0 and \$448 with a median of \$9.

Table 62: Out of pocket charges for other medical services by state/territory

State/territory	ACT	NSW	NT	QLD	SA	TAS	VIC	WA
% of separations with OOP	4%	15%	54%	18%	5%	2%	23%	28%
Average OOP charged	\$192	\$140	\$185	\$133	\$71	\$128	\$128	\$136

Why is there such variation in the average out of pocket charge?

Sustainability in Healthcare Committee membership

Mr Lawrie Malisano (Orthopaedic Surgeon, QLD), Chair	Dr Cathy Ferguson (Otolaryngology Head and Neck Surgeon, NZ)	Prof David Fletcher (General Surgeon, WA)
Prof Mark Frydenberg (Urology, VIC)	Mr Bruce Hall (Neurosurgeon, QLD)	Mr Richard Lander (Orthopaedic Surgeon, NZ)
Dr Sally Langley (Plastic and Reconstructive Surgeon, NZ)	Prof Guy Maddern (General Surgeon, SA)	Dr John Quinn (Vascular Surgeon, QLD)
Mr Phil Truskett (General Surgeon, NSW)		

Definitions

Table 63: Definitions

Term	Definition
ACT	Australian Capital Territory
HCP	Hospital Casemix Protocol. HCP data includes details of diagnoses, interventions, demographics and financial data relating to members' treatment in hospital
Hospital Acquired Complication	Medibank's subset of 82 ICD10 codes drawn from the Australian Commission of Safety and Quality in Healthcare's high priority complications dataset (see Table 62).
ICD	International Classification of Diseases. The ICD is the standard diagnostic tool for epidemiology, health management and clinical purposes.
ICU	Intensive Care Unit
MBS	Medicare Benefit Schedule
Median	The middle number in a given sequence of numbers
NSW	New South Wales
NT	Northern Territory
QLD	Queensland
SA	South Australia
Operation	Surgery performed on a patient that may involve one or more surgical procedures
Out of pocket charge	The amount payable by the patient to a medical provider (including medical practitioners and diagnostics providers) for services performed during the hospital separation
Principal surgeon/specialist	The surgeon/specialist who billed the MBS item with the highest fee in a separation
Primary procedure	The procedure performed on the patient with the highest value MBS fee
RACS	Royal Australasian College of Surgeons
Separation	The episode of admitted patient care
VIC	Victoria
WA	Western Australia

Table 64: Categories of Hospital Acquired Complications

Category	Sub-Category		
Pressure Injury	NA (only includes type 3 and 4 pressure ulcers)		
Falls	Cranial Injury	Other Fracture	Femoral Fracture
Healthcare Associated Infection	Urinary Tract Infection Surgical Site Infection	Blood Stream Infection Prostheses Site Infection	
Surgical Complication	Post-operative Haemorrhage and Haematoma	Other surgical complications including, thrombophlebitis, transfusion reaction, accidental puncture and laceration, wound disruption	
Venous Thromboembolism	Pulmonary Embolism	Venous Thrombosis	

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RACS

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Medibank

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